Magelis Panel PC

Universal and Performance User Manual

09/2012



The information provided in this documentation contains general descriptions and/or technical characteristics of the performance of the products contained herein. This documentation is not intended as a substitute for and is not to be used for determining suitability or reliability of these products for specific user applications. It is the duty of any such user or integrator to perform the appropriate and complete risk analysis, evaluation and testing of the products with respect to the relevant specific application or use thereof. Neither Schneider Electric nor any of its affiliates or subsidiaries shall be responsible or liable for misuse of the information that is contained herein. If you have any suggestions for improvements or amendments or have found errors in this publication, please notify us.

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All pertinent state, regional, and local safety regulations must be observed when installing and using this product. For reasons of safety and to help ensure compliance with documented system data, only the manufacturer should perform repairs to components.

When devices are used for applications with technical safety requirements, the relevant instructions must be followed.

Failure to use Schneider Electric software or approved software with our hardware products may result in injury, harm, or improper operating results.

Failure to observe this information can result in injury or equipment damage.

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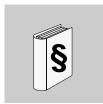
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Safety Information



Important Information

NOTICE

Read these instructions carefully, and look at the equipment to become familiar with the device before trying to install, operate, or maintain it. The following special messages may appear throughout this documentation or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a Danger safety label indicates that an electrical hazard exists, which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible injury or death.

A DANGER

DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.



WARNING indicates a potentially hazardous situation which, if not avoided, **can result in** death or serious injury.

A CAUTION

CAUTION indicates a potentially hazardous situation which, if not avoided, **can** result in minor or moderate injury.

NOTICE

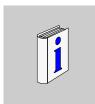
NOTICE is used to address practices not related to physical injury.

PLEASE NOTE

Electrical equipment should be installed, operated, serviced, and maintained only by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction and operation of electrical equipment and its installation, and has received safety training to recognize and avoid the hazards involved.

About the Book



At a Glance

Document Scope

This manual describes the configuration and usage of the Universal and Performance Panel PCs, part of the range of Magelis industrial PCs, for its cataloged and configured product offers.

The Panel PC is designed to operate in an industrial environment.

1 Cataloged product offer:

- HMI PPH9A270• Panel PC 19" Performance AC 2 slots
 - 100...240 Vac
 - 19" SXGA Touch screen
 - 2.26 GHz Core 2 Duo processor
 - 2 GB RAM
 - 250 GB Hard disk drive (HDD)
 - Windows® 7 Ultimate (64 bit)
- HMI PPH9D270• Panel PC 19" Performance DC 2 slots
 - 24 Vdc
 - 19" SXGA Touch screen
 - 2.26 GHz Core 2 Duo processor
 - 2 GB RAM
 - 250 GB Hard disk drive (HDD)
 - Windows® 7 Ultimate (64 bit)
- HMI PPF9A27F• Panel PC 19" Performance AC 2 slots VJC
 - 100...240 Vac
 - 19" SXGA Touch screen
 - 2.26 GHz Core 2 Duo processor
 - 4 GB RAM
 - 32 GB Flash drive (SSD)
 - Windows® 7 Ultimate (64 bit)

- HMI PPF9A270• Panel PC 19" Performance AC 2 slots
 - 100...240 Vac
 - 19" SXGA Touch screen
 - 2.26 GHz Core 2 Duo processor
 - 2 GB RAM
 - 32 GB Flash drive (SSD)
 - Windows® 7 Ultimate (64 bit)
- HMI PPH7B270• Panel PC 15" Performance DC 2 slots battery
 - 24 Vdc
 - 15" XGA Touch screen
 - Interface UPS pre-installed
 - 2.26 GHz Core 2 Duo processor
 - 2 GB RAM
 - 250 GB Hard disk drive (HDD)
 - Windows® 7 Ultimate (64 bit)
- HMI PPH7A270• Panel PC 15" Performance AC 2 slots
 - 100...240 Vac
 - 15" XGA Touch screen
 - 2.26 GHz Core 2 Duo processor
 - 2 GB RAM
 - 250 GB Hard disk drive (HDD)
 - Windows® 7 Ultimate (64 bit)
- HMI PPH7D270• Panel PC 15" Performance DC 2 slots
 - 24 Vdc
 - 15" XGA Touch screen
 - 2.26 GHz Core 2 Duo processor
 - 2 GB RAM
 - 250 GB Hard disk drive (HDD)
 - Windows® 7 Ultimate (64 bit)
- HMI PPF7A27F• Panel PC 15" Performance AC 2 slots VJC
 - 100...240 Vac
 - 15" XGA Touch screen
 - 2.26 GHz Core 2 Duo processor
 - 4 GB RAM
 - 32 GB Flash drive (SSD)
 - Windows® 7 Ultimate (64 bit)
- HMI PPF7A270• Panel PC 15" Performance AC 2 slots
 - 100...240 Vac
 - 15" XGA Touch screen
 - 2.26 GHz Core 2 Duo processor
 - 2 GB RAM
 - 32 GB Flash drive (SSD)
 - Windows® 7 Ultimate (64 bit)

- HMI PRH7A270 Panel PC Stainless Steel 15" Performance AC 2 slots
 - 100...240 Vac
 - 15" XGA Touch screen
 - 2.26 GHz Core 2 Duo processor
 - 2 GB RAM
 - 250 GB Hard disk drive (HDD)
 - Windows® 7 Ultimate (64 bit)
- HMI PPH9A070• Panel PC 19" Performance AC 0 slot
 - 100...240 Vac
 - 19" SXGA Touch screen
 - 2.26 GHz Core 2 Duo processor
 - 2 GB RAM
 - 250 GB Hard disk drive (HDD)
 - Windows® 7 Ultimate (64 bit)
- HMI PPH9D070• Panel PC 19" Performance DC 0 slot
 - 24 Vdc
 - 19" SXGA Touch screen
 - 2.26 GHz Core 2 Duo processor
 - 2 GB RAM
 - 250 GB Hard disk drive (HDD)
 - Windows® 7 Ultimate (64 bit)
- HMI PPF9D07F• Panel PC 19" Performance DC 0 slot VJC
 - 24 Vdc
 - 19" SXGA Touch screen
 - 2.26 GHz Core 2 Duo processor
 - 4 GB RAM
 - 32 GB Flash drive (SSD)
 - Windows® 7 Ultimate (64 bit)
- HMI PPF9D070• Panel PC 19" Performance DC 0 slot
 - 24 Vdc
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- HMI PPF7D070• Panel PC 15" Performance DC 0 slot
 - 24 Vdc
 - 15" XGA Touch screen
 - 2.26 GHz Core 2 Duo processor
 - 2 GB RAM
 - 32 GB Flash drive (SSD)
 - Windows® 7 Ultimate (64 bit)
- HMI PUH9A2P0• Panel PC 19" Universal AC 2 slots
 - 100...240 Vac
 - 19" SXGA Touch screen
 - 1.6 GHz Atom processor
 - 1 GB RAM
 - 250 GB Hard disk drive (HDD)
 - Windows® XP Professional SP3
- HMI PUH9D2P0• Panel PC 19" Universal DC 2 slots
 - 24 Vdc
 - 19" SXGA Touch screen
 - 1.6 GHz Atom processor
 - 1 GB RAM
 - 250 GB Hard disk drive (HDD)
 - Windows® XP Professional SP3
- HMI PUF9A2PF• Panel PC 19" Universal AC 2 slots VJC
 - 100...240 Vac
 - 19" SXGA Touch screen
 - 1.6 GHz Atom processor
 - 2 GB RAM
 - 32 GB Flash drive (SSD)
 - Windows® XP Professional SP3

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 - 15" XGA Touch screen
 - 1.6 GHz Atom processor
 - 1 GB RAM
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- HMI PUH7D2PF• Panel PC 15" Universal AC 2 slots VJC
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 - 2 GB RAM
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 - 100...240 Vac
 - 15" XGA Touch screen
 - 1.6 GHz Atom processor
 - 1 GB RAM
 - 32 GB Flash drive (SSD)
 - Windows® XP Professional SP3
- HMI PTH7D2P0• Panel PC Stainless Steel 15" Universal DC 2 slots
 - 24 Vdc
 - 15" XGA Touch screen
 - 1.6 GHz Atom processor
 - 1 GB RAM
 - 250 GB Hard disk drive (HDD)
 - Windows® XP Professional SP3
- HMI PTF7D2P0• Panel PC Stainless Steel 15" Universal DC 2 slots
 - 24 Vdc
 - 15" XGA Touch screen
 - 1.6 GHz Atom processor
 - 1 GB RAM
 - 32 GB Flash drive (SSD)
 - Windows® XP Professional SP3

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 - 2 GB RAM
 - 32 GB Flash drive (SSD)
 - Windows® XP Professional SP3
- HMI PUF9D0P0• Panel PC 19" Universal DC 0 slot
 - 24 Vdc
 - 19" SXGA Touch screen
 - 1.6 GHz Atom processor
 - 1 GB RAM
 - 32 GB Flash drive (SSD)
 - Windows® XP Professional SP3
- HMI PUC9D0E0• Panel PC 19" Universal DC 0 slot
 - 24 Vdc
 - 19" SXGA Touch screen
 - 1.6 GHz Atom processor
 - 1 GB RAM
 - 4 GB Compact Flash card
 - Windows® Embedded Standard 2009
- HMI PUH7A0P0• Panel PC 15" Universal AC 0 slot
 - 100...240 Vac
 - 15" XGA Touch screen
 - 1.6 GHz Atom processor
 - 1 GB RAM
 - 250 GB Hard disk drive (HDD)
 - Windows® XP Professional SP3

- HMI PUH7D0P0• Panel PC 15" Universal DC 0 slot
 - 24 Vdc
 - 15" XGA Touch screen
 - 1.6 GHz Atom processor
 - 1 GB RAM
 - 250 GB Hard disk drive (HDD)
 - Windows® XP Professional SP3
- HMI PUF7D0PL• Panel PC 15" Universal DC 0 slot VJC
 - 24 Vdc
 - 15" XGA Touch screen
 - 1.6 GHz Atom processor
 - 2 GB RAM
 - 32 GB Flash drive (SSD)
 - Windows® XP Professional SP3
- HMI PUF7A0P0• Panel PC 15" Universal AC 0 slot
 - 100...240 Vac
 - 15" XGA Touch screen
 - 1.6 GHz Atom processor
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 - Windows® XP Professional SP3
- HMI PUF7D0P0• Panel PC 15" Universal DC 0 slot
 - 24 Vdc
 - 15" XGA Touch screen
 - 1.6 GHz Atom processor
 - 1 GB RAM
 - 32 GB Flash drive (SSD)
 - Windows® XP Professional SP3
- HMI PUC7D0E0• Panel PC 15" Universal DC 0 slot
 - 24 Vdc
 - 15" XGA Touch screen
 - 1.6 GHz Atom processor
 - 1 GB RAM
 - 4 GB Compact Flash card
 - Windows® Embedded Standard 2009

NOTE: The part number for your unit may not be included in the user manual. Commercial part numbers listed in the user manual are for products available when the user manual was published. New part numbers may be added to the product range.

New and existing cataloged part numbers are always composed of a prefix (HMI), a space, followed by a serial arrangement of 9 characters (letter or number). Each one of the 9 characters matches with one characteristic of the cataloged Panel PC, such as storage device size, storage device type, memory size, and bundled software.

The following table is a legend that identifies the features corresponding to each character of the part number:

Character Number		Prefix	1	2	3	4	5	6	7	8	9
Part Number Example		НМІ	Р	Р	Н	9	D	2	7	0	1
iPC Family	Panel PC P										
iPC Type	Performance		Р								
	Univers	al		U							
	Perform steel	ance stair	less	R							
	Univers steel	al stainles	S	Т							
Drive	Hard dis	sk drive (H	DD)		Н						
	Flash d	rive (SSD)			F						
	Compa	ct Flash (C	F)		С						
Display	15" - XC	βA				7					
	19" - SX	(GA				9					
Power Supply	AC						Α				
	DC with	battery backup					В				
	DC						D				
Expansion Slots	None							0			
	2							2			
Operating System	Window	s® XP Pro	ofessi	onal S	P3				Р		
	Window	rs® Embed	dded S	Standa	ard 20	09			Е		
		rs® 7 Ultim ormance E				iversa	al and	64-bit	7		
Bundled Software	None									0	
	Vijeo Citect RunTime 500 I/O Full								F		
	Vijeo Ci	tect RunTi	me 12	200 1/0	O Lite					L	
	Other a	pplication								•	
Hardware Iteration	Initial			-	-				-		1
	Second	ond									2
	etc.										etc.

2 Configured product offer:

In addition to the catalog offer, other configurations may be available in some countries.

These configured offers use a fixed method of identification. The configured part numbers are always composed of an arrangement of 20 characters (letters or numbers). The 6 first characters are always HMI PCC. Each one of the following 14 characters matches with one characteristic of the configured Panel PC, such as storage device size, storage device type, memory size, and bundled software.

This offer has similar characteristics and functionalities as the cataloged offer described in this manual.

In addition to this part number, a configuration number is printed on the product label.

The configuration number format is as follows:

Character Number	Prefix (1-6)	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Part Number Example	HMI PCC	Р	1	7	1	В	D	2	3	s	2	1	٧	0	0
iPC Family	Panel PC stainless steel	Т													
	Panel PC	Р													
Product Generation	First generation	•	1												
	Second generation		2												
	Third generation		3												
Display	15" - XGA			7											
	19" - SXGA			8											
Expansion Slots	0 slot			•	0										
	2 slots = 1 PCI+1 PC	le			2										
	2 slots = 2 PCI				Α										
CPU Type	Atom N270 (Universa	al)				В									
	Core 2 Duo P8400 (F	Perfo	rman	ce)		С									
Power Supply	AC					•	Α								
	DC with interface for	Batte	ery ba	ackup)		В								
	DC						D								
	DC with filter for mar	ine					F								
	DC with interface for for marine	Batte	ery ba	ackup	and	filter	G								

Character Number	Prefix (1-6)	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Part Number Example	НМІ РСС	Р	1	7	1	В	D	2	3	s	2	1	٧	0	0
RAM (Configuration	1 GB (Universal only)	I			1		1	1							
available depending on model)	2 GB 2														
on model)	3 GB = 1 GB + 2 GB (Universal only)														
	4 GB = 2 GB + 2 GB	(Perf	orma	nce c	only)			4							
	6 GB = 2 GB + 4 GB	(Perf	orma	nce c	only)			6							
	8 GB = 4 GB + 4 GB	(Perf	orma	nce c	only)			8							
Operating System	None								0						
	Windows® Embedde MUI)	d Sta	ndar	d 200	9 (32	2-bit,	Engli	sh	1						
	Windows® XP Profes	siona	al (32	-bit, I	Englis	sh Ml	(ال		3						
	Windows® Embedde English MUI)	d Sta	ndar	d 7 P	remiu	ım (3	2-bit		4						
	Windows® 7 Ultimate	(32-	bit, E	nglis	h MU	I)			5						
	Windows® 7 Ultimate	(64-	bit, E	nglis	h MU	I)			6						
Storage Device	None								,	N					
	CF 2 GB									В					
	CF 4 GB									С					
	CF 8 GB									D					
	HDD default size									K					
	SSD 32 GB									Т					
Slide-in Equipment	None										0				
	DVD writer										1				
	HDD size same as de	fault									2				
	SSD size same as de	fault									3				
Options	None											0			
NOTE: only for 2 slots Panel PC.	RAID											1			
Tunori o.	3 rd Com port RS-422 - RS-485									4					
	3 rd Com port + RAID											6			
Software Bundle	None											•	N		
	Vijeo Citect Lite 1200	I/O											L		
	Vijeo Citect Full 500 I/O							-	٧						
	Vijeo Designer RT un	limite	d lice	ence									Н		

Character Number	Prefix (1-6)	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Part Number Example	HMI PCC	Р	1	7	1	В	D	2	3	s	2	1	٧	0	0
Reserved	None													0	
Reserved	None														0

NOTE: All instructions applicable to the enclosed product and all safety precautions must be observed.

Validity Note

This documentation is valid for Magelis Panel PC.

The technical characteristics of the devices described in this manual also appear online. To access this information online:

Step	Action
1	Go to the Schneider Electric home page www.schneider-electric.com.
2	In the Search box type the reference of a product or the name of a product range. • Do not include blank spaces in the model number/product range. • To get information on a grouping similar modules, use asterisks (*).
3	If you entered a reference, go to the Product datasheets search results and click on the reference that interests you. If you entered the name of a product range, go to the Product Ranges search results and click on the product range that interests you.
4	If more than one reference appears in the Products search results, click on the reference that interests you.
5	Depending on the size of your screen, you maybe need to scroll down to see the data sheet.
6	To save or print a data sheet as a .pdf file, click Download XXX product datasheet .

The characteristics that are presented in this manual should be the same as those characteristics that appear online. In line with our policy of constant improvement, we may revise content over time to improve clarity and accuracy. If you see a difference between the manual and online information, use the online information as your reference.

Registered Trademarks

PL7, Vijeo Designer, Vijeo Citect and Unity are registered trademarks of Schneider Electric.

Microsoft® and Windows® are registered trademarks of Microsoft Corporation.

Intel®, Atom®, and Core 2 Duo® are registered trademarks of Intel Corporation.

IBM® is a registered trademark of International Business Machines Corporation.

Related Documents

Title of Documentation	Reference Number
Vijeo Designer Tutorial	35007035

You can download these technical publications and other technical information from our website at www.schneider-electric.com.

Product Related Information

Some Panel PCs are certified for use in Class I, Division 2 hazardous locations as defined in ANSI/ISA 12.12.01 or CSA C22.2 N° 213. Observe the following:

A A DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Unplug the power cable from both the Panel PC and the power supply.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace and secure all covers or elements of the system before applying power to the unit.
- Use only the specified voltage when operating the Panel PC. The AC unit is
 designed to use 100...240 Vac input. The DC unit is designed to use 24 Vdc.
 Always check whether your device is AC or DC powered before applying power.

Failure to follow these instructions will result in death or serious injury.

A WARNING

LOSS OF CONTROL

- The designer of any control scheme must consider the potential failure modes
 of control paths and, for certain critical control functions, provide a means to
 achieve a safe state during and after a path failure. Examples of critical control
 functions are emergency stop and overtravel stop.
- Separate or redundant control paths must be provided for critical control functions.
- System control paths may include communication links. Consideration must be given to the implications of unanticipated transmission delays or failures of the link (1)
- Each implementation of a Magelis Panel PC must be individually and thoroughly tested for proper operation before being placed into service.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

(1) For additional information, refer to NEMA ICS 1.1 (latest edition), "Safety Guidelines for the Application, Installation, and Maintenance of Solid State Control" and to NEMA ICS 7.1 (latest edition), "Safety Standards for Construction and Guide for Selection, Installation and Operation of Adjustable-Speed Drive Systems" or other applicable standards in your location.

NOTE: The Panel PC is a highly configurable device and is not based on a real-time operating system. Changes to the software and settings of the following must be considered new implementations as discussed in the previous warning messages. Examples of such changes include:

- System BIOS
- System Monitor (see page 155)
- Operating system
- Installed hardware
- Installed software

A WARNING

UNINTENDED EQUIPMENT OPERATION

Use only Schneider Electric software with the devices described in this manual.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

User Comments

We welcome your comments about this document. You can reach us by e-mail at techcomm@schneider-electric.com.

General Overview



Subject of this Part

This part provides an overview of the Magelis Panel PC products.

What Is in This Part?

This part contains the following chapters:

Chapter	Chapter Name	Page
1	Important Information	23
2	Physical Overview	35
3	Characteristics	57
4	Dimensions/Assembly	65

Important Information

1

General

This chapter describes specific aspects related to the operation of the Panel PC.

What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
Federal Communications Commission Radio Frequency Interference Statement - For U.S.A.	24
Qualified Personnel	25
Certifications and Standards	26
European (CE) Compliance	28
Hazardous Location Installations - For USA and Canada	29

Federal Communications Commission Radio Frequency Interference Statement - For U.S.A.

FCC Radio Interference Information

This equipment has been tested and found to comply with the Federal Communications Commission (FCC) limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial, industrial or business environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause or be subject to interference with radio communications. To minimize the possibility of electromagnetic interference in your application, observe the following two rules:

- Install and operate the Panel PC in such a manner that it does not radiate sufficient electromagnetic energy to cause interference in nearby devices.
- Install and test the Panel PC to ensure that the electromagnetic energy generated by nearby devices does not interfere with the Panel PC's operation.

A WARNING

ELECTROMAGNETIC / INTERFERENCE

Electromagnetic radiation may disrupt the Panel PC's operations, leading to unintended equipment operation. If electromagnetic interference is detected:

- Increase the distance between the Panel PC and the interfering equipment.
- Reorient the Panel PC and the interfering equipment.
- Reroute power and communication lines to the Panel PC and the interfering equipment.
- Connect the Panel PC and the interfering equipment to different power supplies.
- Always use shielded cables when connecting the Panel PC to a peripheral device or another computer.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Qualified Personnel

General

Only qualified personnel can install, operate, and maintain the product. A qualified person is one who has skills and knowledge related to the construction, operation, and installation of electrical equipment, and has received safety training to recognize and avoid the hazards involved. Refer to the most current release of NFPA 70E®, Standard for Electrical Safety in the Workplace, for electrical safety training requirements or other applicable standards in your location. Examples of qualified personnel may include:

- at the application design level, engineering department personnel who are familiar with automation safety concepts (for example, a design engineer)
- at the equipment implementation level, personnel who are familiar with the installation, connection and commissioning of automation equipment (for example, an installation assembly or cabling engineer or a commissioning technician)
- at the operation level, personnel who are experienced in the use and control of automation and computing equipment (for example, an operator)
- for preventive or corrective maintenance, personnel trained and qualified in regulating or repairing automated and computing devices (for example, an operating technician or after-sales service technician.)

Certifications and Standards

Agency Certifications

Schneider Electric submitted this product for independent testing and qualification by third-party agencies. These agencies have certified this product as meeting the following standards:

For AC and DC products: Underwriters Laboratories Inc., UL 508 and CSA C22.2 N° 142, Industrial Control Equipment

For AC and DC products: Underwriters Laboratories Inc., ANSI/ISA 12.12.01 and CSA C22.2 N° 213, Electrical Equipment for Use in Class I, Division 2 Hazardous (Classified) Locations

For AC and DC products: GOST certification. Refer to product markings. **Only for DC products:** ATEX certification by Technical Inspection Association. Refer to product markings.

Only for Universal DC products with CF card or SSD drive: Merchant Navy rules. Products are designed to comply with Merchant Navy rules. Refer to the Schneider Electric Web site for Merchant Navy rules installation guidelines. Refer to product markings.

NOTE: For detailed information, contact your local distributor and see the catalog and markings on the product.

Compliance Standards

Schneider Electric tested this product for compliance with the following compulsory standards:

- United States:
 - Federal Communications Commission, FCC Part 15
- Europe: CE
 - Directive 2006/95/EC (Low Voltage)
 - Directive 2004/108/EC (EMC)
 - Programmable Controllers: EN 61131-2 (Ed 3)
 - EMI: EN55011 (Group 1, Class A), EN 61000-6-4
 - EMS: EN 61000-6-2
- Australia:
 - Standard AS/NZS CISPR11 (C-Tick)

Qualification Standards

Schneider Electric voluntarily tested this product to additional standards. The additional tests performed, and the standards under which the tests were conducted, are specifically identified in Environmental Characteristics (see page 63).

Hazardous Substances

This product is compliant with:

- WEEE, Directive 2002/96/EC
- RoHS, Directive 2002/95/EC
- RoHS China, Standard SJ/T 11363-2006
- REACh regulation EC 1907/2006

NOTE: Documentation about sustainable development is available on Schneider Electric web site (Product Environmental Profile and End of Life Instruction, RoHS and REACh certificates).

End of Life (WEEE)

The product contains electronic boards. It must be disposed of in specific treatment channels. The product contains cells and/or storage batteries which must be collected and processed separately, when they have run out and at the end of product life.

Refer to the section Maintenance (see page 171) to extract cells and batteries from the product. These batteries do not contain a weight percentage of heavy metals over the threshold notified by European Directive 2006/66/EC.

European (CE) Compliance

CE Compliance Note

The products described in this manual comply with the European Directives concerning Electromagnetic Compatibility and Low Voltage (CE marking) when used as specified in the relevant documentation, in applications for which they are specifically intended, and in connection with approved third-party products.

Hazardous Location Installations - For USA and Canada

General

The Panel PC has been designed with the intention of meeting the requirements of Class I, Division 2 hazardous location applications. Division 2 locations are those locations where ignitable concentrations of flammable substances are normally confined, prevented by ventilation, or present in an adjacent Class I, Division 1 location, but where an abnormal situation might result in intermittent exposure to such ignitable concentrations.

While the Panel PC is a non-incendive device under ANSI/ISA 12.12.01 and CSA C22.2 N° 213, it is not designed for, and should never be used within a Division 1 (normally hazardous) location.

This equipment is suitable for use in Class I, Division 2, Groups A, B, C, and D hazardous locations or in non-hazardous locations. Before installing or using your Panel PC, confirm that the ANSI/ISA 12.12.01 or CSA C22.2 N° 213 certification appears on the product labeling

NOTE: Some Panel PC devices are not yet rated as suitable for use in hazardous locations. Always use your product in conformance with the product labeling and this manual.

A DANGER

EXPLOSION HAZARD

- Do not use your Panel PC in hazardous environments or locations other than Class I, Division 2, Groups A, B, C, and D.
- Always confirm that your Panel PC is suitable for use in hazardous locations by checking that the ANSI/ISA 12.12.01 or CSA C22.2 N° 213 certification appears on the product labeling.
- Do not install any Schneider Electric or OEM components, equipment, or accessories unless these have also been qualified as suitable for use in Class I, Division 2, Groups A, B, C, and D locations.
- In addition, confirm that any PCI controller cards have an adequate temperature code (T-code), and are suitable for a surrounding air temperature range of 0 to 50 °C (32 to 122 °F).
- Do not attempt to install, operate, modify, maintain, service, or otherwise alter the Panel PC except as permitted in this manual. Unpermitted actions may impair the unit's suitability for Class I, Division 2 operation.

Failure to follow these instructions will result in death or serious injury.

A DANGER

EXPLOSION HAZARD

- Always confirm the ANSI/ISA 12.12.01 and CSA C22.2 N° 213 hazardous location rating of your device before installing or using it in a hazardous location.
- To power on or power off a Panel PC installed in a Class I, Division 2 hazardous location, you must either:
 - Use a switch located outside the hazardous environment, or
 - Use a switch certified for Class I, Division 1 operation inside the hazardous area.
- Do not connect or disconnect equipment unless power has been switched off or the area is known to be non-hazardous. This applies to all connections including power, ground, serial, parallel, and network connections.
- Never use unshielded / ungrounded cables in hazardous locations.
- Use only non-incentive USB configuration.
- When enclosed, keep enclosure doors and openings closed at all times to avoid the accumulation of foreign matter inside the workstation.

Failure to follow these instructions will result in death or serious injury.

A A DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Unplug the power cable from both the Panel PC and the power supply.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace and secure all covers or elements of the system before applying power to the unit.
- Use only the specified voltage when operating the Panel PC. The AC unit is
 designed to use 100...240 Vac input. The DC unit is designed to use 24 Vdc.
 Always check whether your device is AC or DC powered before applying power.

Failure to follow these instructions will result in death or serious injury.

Ensure that the product is properly rated for the location. If the intended location does not presently have a Class, Division and Group rating, then users should consult the appropriate authorities having jurisdiction in order to determine the correct rating for that hazardous location.

In accordance with Federal, State/Provincial, and Local regulations, all hazardous location installations should be inspected prior to use by the appropriate authority having jurisdiction. Only technically qualified personnel should install, service, and inspect these systems.

Power Switch

A A DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Unplug the power cable from both the Panel PC and the power supply.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace and secure all covers or elements of the system before applying power to the unit.
- Use only the specified voltage when operating the Panel PC. The AC unit is
 designed to use 100...240 Vac input. The DC unit is designed to use 24 Vdc.
 Always check whether your device is AC or DC powered before applying power.

Failure to follow these instructions will result in death or serious injury.

The amount of input power required by systems with a Panel PC classifies the power switch as an incendive device because the voltage and current across the make/break component are capable of generating a spark.

If using an ordinary power switch, hazardous location regulations require the power switch be located in an area specified as non-hazardous.

However, limits in cable length between the workstation and the power switch may apply. Otherwise the switch must be compliant with Class I, Division 1 requirements (intrinsically safe). These switches are built in a manner that prevents the possibility of a spark when contact is made or broken.

Use suitable UL listed and/or CSA Certified Class I, Division 1 switches in hazardous locations. These switches are available from a wide number of sources. It is the responsibility to ensure you select a power switch that conforms to the hazardous location rating for the installation.

Cable Connections

A DANGER

EXPLOSION HAZARD

- Always confirm the ANSI/ISA 12.12.01 and CSA C22.2 N° 213 hazardous location rating of your device before installing or using it in a hazardous location.
- To power on or power off a Panel PC installed in a Class I, Division 2 hazardous location, you must either:
 - Use a switch located outside the hazardous environment, or
 - Use a switch certified for Class I, Division 1 operation inside the hazardous area.
- Do not connect or disconnect equipment unless power has been switched off or the area is known to be non-hazardous. This applies to all connections including power, ground, serial, parallel, and network connections.
- Never use unshielded / ungrounded cables in hazardous locations.
- Use only non-incentive USB configuration.
- When enclosed, keep enclosure doors and openings closed at all times to avoid the accumulation of foreign matter inside the workstation.

Failure to follow these instructions will result in death or serious injury.

Division 2 hazardous location regulations require that all cable connections be provided with adequate strain relief and positive interlock. Use only non-incendive USB devices as USB connections do not provide adequate strain relief to allow the use of Panel PC USB connections (see page 101). Never connect or disconnect a cable while power is applied at either end of the cable. All communication cables should include a chassis ground shield. This shield should include both copper braid and aluminum foil. The D-sub style connector housing must be a metal conductive type (e.g., molded zinc) and the ground shield braid must be terminated directly to the connector housing. Do not use a shield drain wire.

The outer diameter of the cable must be suited to the inner diameter of the cable connector strain relief so that a reliable degree of strain relief is maintained. Always secure the D-Sub connectors to the workstation-mating connectors via the two screws located on both sides.

Operation and Maintenance

The systems have been designed for compliance with relevant spark ignition tests.

A DANGER

EXPLOSION HAZARD

In addition to the other instructions in this manual, observe the following rules when installing the Panel PC in a hazardous location:

- Wire the equipment in accordance with the National Electrical Code article 501.10 (B) for Class I, Division 2 hazardous locations.
- Install the Panel PC in an enclosure suitable for the specific application. Type 4
 or IP65 enclosures are recommended even when not required by regulations.

Failure to follow these instructions will result in death or serious injury.

NOTE: Type 4 and IP65 are not part of UL certification for hazardous locations.

Physical Overview

2

Subject of this Chapter

This chapter provides a physical overview of the Panel PC.

What Is in This Chapter?

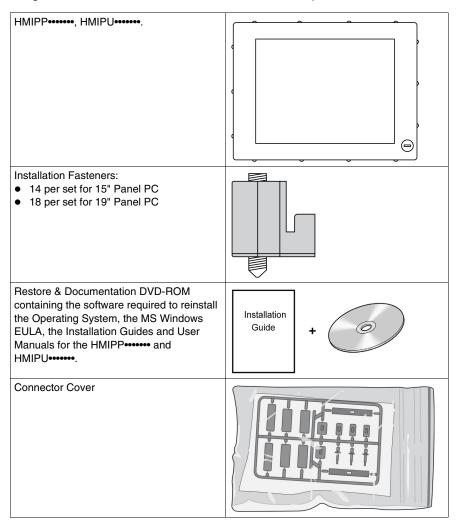
This chapter contains the following topics:

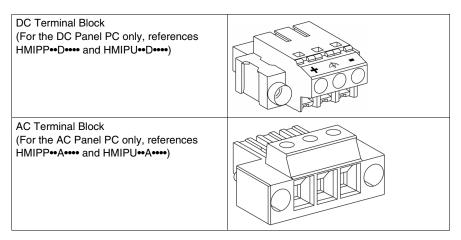
Topic	Page
Package Contents	36
Panel PC 15" - 0 slot Description	38
Panel PC 15" - 2 slots Description	42
Panel PC 19" - 0 slot Description	47
Panel PC 19" - 2 slots Description	51
Panel PC LED Description	56

Package Contents

Items

The following items are included in the package of the Magelis Panel PC. Before using the Panel PC, confirm that all items listed here are present:





This Panel PC has been carefully packed, with special attention to quality. However, should you find anything damaged or missing, contact your local distributor immediately.

Panel PC 15" - 0 slot Description

Introduction

The following Panel PC 15" - 0 slot description includes products for both AC and DC power supplies.

During operation, surface temperatures of the heat sink may reach 70 °C (158 °F).

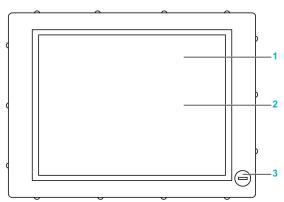
A WARNING

RISK OF BURNS

Do not touch the surface of the heat sink during operation.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Front View



- 1 Display
- 2 Touch panel
- 3 Front USB (USB5 max. 1 A) with cover (depending on references)

NOTE: The front USB is a diagnostic interface for service and maintenance.

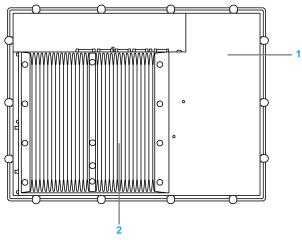
NOTICE

UNINTENDED EQUIPMENT OPERATION

- Do not use the front USB while the machine is in operation.
- Always keep the cover in place during normal operation.

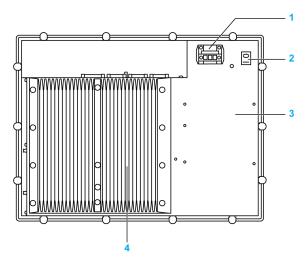
Failure to follow these instructions can result in equipment damage.

Rear View of the DC Panel PC



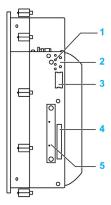
- 1 Panel PC cover
- 2 Heat sink

Rear View of the AC Panel PC



- 1 AC power connector (with AC terminal block)
- 2 Power switch
- 3 Panel PC cover
- 4 Heat sink

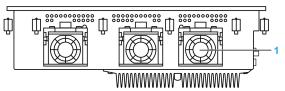
Right View



- 1 Status LEDs
- 2 Power/Reset button
- 3 Battery
- 4 Compact Flash slot CF1/Connection via IDE-PATA
- 5 Slide-in compact slot

Bottom View

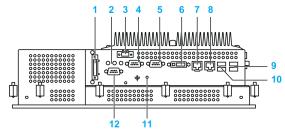
The following figure shows the bottom of the Performance Panel PC:



1 Fans (depending on references)

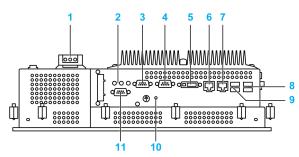
NOTE: The cooling method for the Universal Panel PC is passive heat sink.

Top View of the DC Panel PC



- 1 Add-on UPS slot (depending on references)
- 2 MIC, Line IN, Line out
- 3 DC power connector
- 4 COM2
- **5** COM1
- 6 Monitor/Panel, DVI-I
- 7 ETH1 (10/100/1000 MBit)
- 8 ETH2 (10/100/1000 MBit)
- 9 USB1, USB3 (max.1 A)
- 10 USB2, USB4 (max. 500 mA)
- 11 Ground connection
- **12** Add-on interface slot (depending on references)

Top View of the AC Panel PC



- 1 AC power connector
- 2 MIC, Line IN, Line out
- 3 COM2
- 4 COM1
- 5 Monitor/Panel, DVI-I
- 6 ETH1 (10/100/1000 MBit)
- 7 ETH2 (10/100/1000 MBit)
- 8 USB1, USB3 (max.1 A)
- 9 USB2, USB4 (max. 500 mA)
- 10 Ground connection
- 11 Add-on interface slot (depending on references)

Panel PC 15" - 2 slots Description

Introduction

The following Panel PC 15" - 2 slot description includes products for both AC and DC power supplies.

During operation, surface temperatures of the heat sink may reach 70 °C (158 °F).

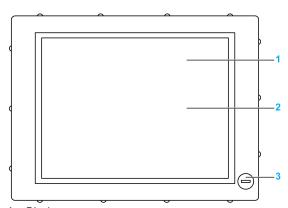
A WARNING

RISK OF BURNS

Do not touch the surface of the heat sink during operation.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Front View



- 1 Display
- 2 Touch panel
- **3** Front USB5 (max. 1 A) with cover (depending on references)

NOTE: The front USB is a diagnostic interface for service and maintenance.

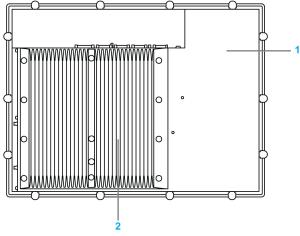
NOTICE

UNINTENDED EQUIPMENT OPERATION

- Do not use the front USB while the machine is in operation.
- Always keep the cover in place during normal operation.

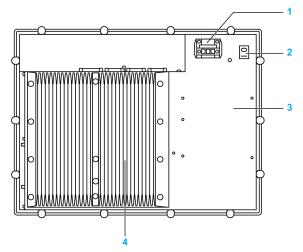
Failure to follow these instructions can result in equipment damage.

Rear View of the DC Panel PC



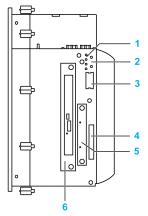
- 1 Panel PC cover
- 2 Heat sink

Rear View of the AC Panel PC



- 1 AC power connector (with AC terminal block)
- 2 Power switch
- 3 Panel PC cover
- 4 Heat sink

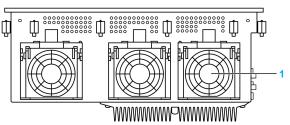
Right View



- 1 Status LEDs
- 2 Power/Reset button
- 3 Battery
- 4 Compact Flash slot CF1/Connection via IDE-PATA
- 5 Slide-in compact slot
- 6 Slide-in slot 1/Connection via SATA (depending on references)

Bottom View

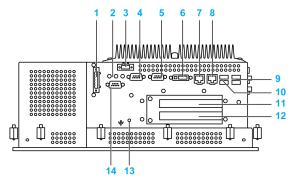
The following figure shows the bottom of the Performance Panel PC:



1 Fans (depending on references)

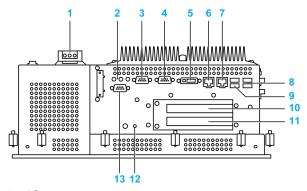
NOTE: The cooling method for the Universal Panel PC is passive heat sink.

Top View of the DC Panel PC



- 1 Add-on UPS slot (depending on references)
- 2 MIC, Line IN, Line out
- 3 DC power connector
- 4 COM2
- **5** COM1
- 6 Monitor/Panel, DVI-I
- 7 ETH1 (10/100/1000 MBit)
- 8 ETH2 (10/100/1000 MBit)
- 9 USB1, USB3 (max.1 A)
- 10 USB2, USB4 (max. 500 mA)
- 11 PCI slot 1 (half-size)/PCI or PCIe (depending on references)
- 12 PCI slot 2 (half-size)/PCI or PCIe (depending on references)
- 13 Ground connection
- 14 Add-on interface slot (depending on references)

Top View of the AC Panel PC



- 1 AC power connector
- 2 MIC, Line IN, Line out
- **3** COM2
- 4 COM1
- 5 Monitor/Panel, DVI-I
- 6 ETH1 (10/100/1000 MBit)
- 7 ETH2 (10/100/1000 MBit)
- 8 USB1, USB3 (max.1 A)
- 9 USB2, USB4 (max. 500 mA)
- 10 PCI slot 1 (half-size)/PCI or PCIe (depending on references)
- 11 PCI slot 2 (half-size)/PCI or PCIe (depending on references)
- 12 Ground connection
- 13 Add-on interface slot (depending on references)

Panel PC 19" - 0 slot Description

Introduction

The following Panel PC 19" - 0 slot description includes products for both AC and DC power supplies.

During operation, surface temperatures of the heat sink may reach 70 °C (158 °F).

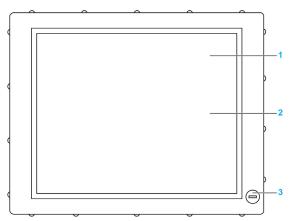
A WARNING

RISK OF BURNS

Do not touch the surface of the heat sink during operation.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Front View



- 1 Display
- 2 Touch panel
- 3 Front USB (USB5 max. 1 A) with cover (depending on references)

NOTE: The front USB is a diagnostic interface for service and maintenance.

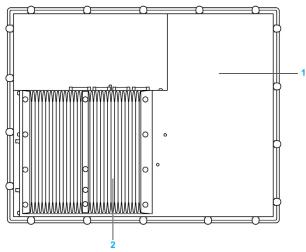
NOTICE

UNINTENDED EQUIPMENT OPERATION

- Do not use the front USB while the machine is in operation.
- Always keep the cover in place during normal operation.

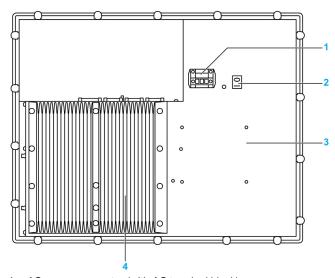
Failure to follow these instructions can result in equipment damage.

Rear View of the DC Panel PC



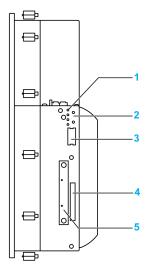
- 1 Panel PC cover
- 2 Heat sink

Rear View of the AC Panel PC



- 1 AC power connector (with AC terminal block)
- 2 Power switch
- 3 Panel PC cover
- 4 Heat sink

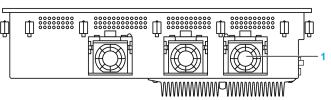
Right View



- 1 Status LEDs
- 2 Power/Reset button
- 3 Battery
- 4 Compact Flash slot CF1/Connection via IDE-PATA
- 5 Slide-in compact slot

Bottom View

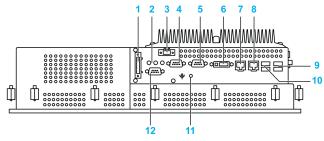
The following figure shows the bottom of the Performance Panel PC:



1 Fans (depending on references)

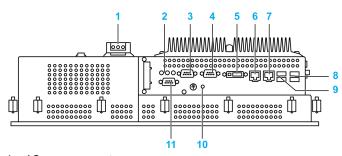
NOTE: The cooling method for the Universal Panel PC is passive heat sink.

Top View the DC Panel PC



- 1 Add-on UPS slot (depending on references)
- 2 MIC, Line IN, Line out
- 3 DC power connector
- 4 COM2
- **5** COM1
- 6 Monitor/Panel, DVI-I
- 7 ETH1 (10/100/1000 MBit)
- 8 ETH2 (10/100/1000 MBit)
- **9** USB1, USB3 (max.1 A)
- 10 USB2, USB4 (max. 500 mA)
- 11 Ground connection
- 12 Add-on interface slot (depending on references)

Top View the AC Panel PC



- 1 AC power connector
- 2 MIC, Line IN, Line out
- **3** COM2
- 4 COM1
- 5 Monitor/Panel, DVI-I
- 6 ETH1 (10/100/1000 MBit)
- 7 ETH2 (10/100/1000 MBit)
- 8 USB1, USB3 (max.1 A)
- 9 USB2, USB4 (max. 500 mA)
- 10 Ground connection
- 11 Add-on interface slot (depending on references)

Panel PC 19" - 2 slots Description

Introduction

The following Panel PC 19" - 2 slot description includes products for both AC and DC power supplies.

During operation, surface temperatures of the heat sink may reach 70 °C (158 °F).

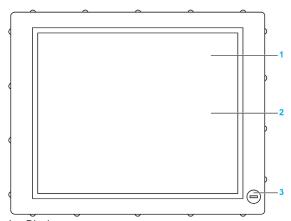
A WARNING

RISK OF BURNS

Do not touch the surface of the heat sink during operation.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Front View



- 1 Display
- 2 Touch panel
- **3** Front USB (USB5 max. 1 A) with cover (depending on references)

NOTE: The front USB is a diagnostic interface for service and maintenance.

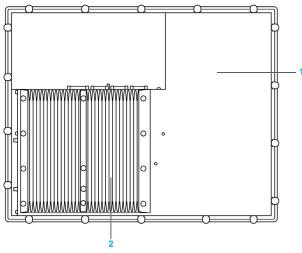
NOTICE

UNINTENDED EQUIPMENT OPERATION

- Do not use the front USB while the machine is in operation.
- Always keep the cover in place during normal operation.

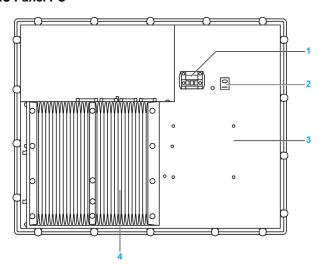
Failure to follow these instructions can result in equipment damage.

Rear View of the DC Panel PC



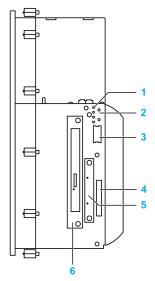
- 1 Panel PC cover
- 2 Heat sink

Rear View of the AC Panel PC



- 1 AC power connector (with AC terminal block)
- 2 Power switch
- 3 Panel PC cover
- 4 Heat sink

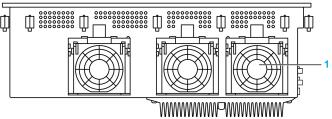
Right View



- 1 Status LEDs
- 2 Power/Reset button
- 3 Battery
- 4 Compact Flash slot CF1/Connection via IDE-PATA
- 5 Slide-in compact slot
- 6 Slide-in slot 1/Connection via SATA (depending on references)

Bottom View

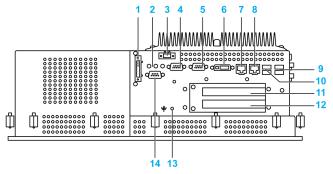
The following figure shows the bottom of the Performance Panel PC:



1 Fans (depending on references)

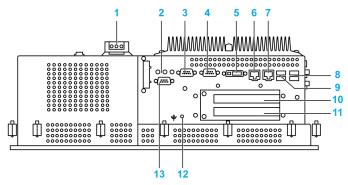
NOTE: The cooling method for the Universal Panel PC is passive heat sink.

Top View the DC Panel PC



- 1 Add-on UPS slot (depending on references)
- 2 MIC, Line IN, Line out
- 3 DC power connector
- 4 COM2
- **5** COM1
- 6 Monitor/Panel, DVI-I
- 7 ETH1 (10/100/1000 MBit)
- 8 ETH2 (10/100/1000 MBit)
- 9 USB1, USB3 (max.1 A)
- 10 USB2, USB4 (max. 500 mA)
- 11 PCI slot 1 (half-size)/PCI or PCIe (depending on references)
- 12 PCI slot 2 (half-size)/PCI or PCIe (depending on references)
- 13 Ground connection
- 14 Add-on interface slot (depending on references)

Top View the AC Panel PC

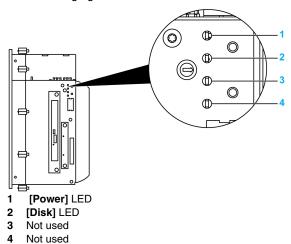


- 1 AC power connector
- 2 MIC, Line IN, Line out
- 3 COM2
- 4 COM1
- 5 Monitor/Panel, DVI-I
- 6 ETH1 (10/100/1000 MBit)
- 7 ETH2 (10/100/1000 MBit)
- 8 USB1, USB3 (max.1 A)
- **9** USB2, USB4 (max. 500 mA)
- 10 PCI slot 1 (half-size)/PCI or PCIe (depending on references)
- 11 PCI slot 2 (half-size)/PCI or PCIe (depending on references)
- 12 Ground connection
- 13 Add-on interface slot (depending on references)

Panel PC LED Description

LED Description

The following figure shows the LEDs on the Panel PC:



Status LED

The following table describes the meaning of the status LEDs on the Panel PC:

LED	Color	State	Meaning
[Power]	Green	On	Supply voltage is OK.
	Red	On	The system is in standby mode (S5: soft-off mode or S4: hibernate mode - Suspend-to-Disk).
	Orange (1)	On	Supply voltage is not OK. The system is operating on battery power.
	Red /green	Flashing	Not used
[Disk]	Yellow	On	Indicates IDE drive access (CF, HDD, CD and so on).
(1) Only lit when add-on UPS module is installed.			

Characteristics

3

Subject of this Chapter

This chapter lists the product characteristics.

What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
Panel PC Characteristics	58
Panel PC Interface Characteristics	62
Environmental Characteristics	63

Panel PC Characteristics

Universal Product Characteristics

The characteristics of the Universal Panel PC models are shown below:

Element		Characteristics		
		0 slot	2 slots	
Expansion Slots		_	2 = 1 PCI + 1 PCIe on cataloged Part Number 2 = 2 PCI also available on configured Part Number	
Intel Chipse Processor	et and	945GME + AtomN270@1.60 GHz + 512 KB L2 cache		
Cooling Me	ethod	Passive heat sink		
RAM		DDR2 667 MHz - 1 GB to 3 C	GB max	
Graphics	Controller	Intel® Graphics Media Accel	erator 950	
	Video Memory	Up to 224 MB (reserved from main memory)		
	Color depth	32 bit (maximum)		
	RGB Resolution	400 MHz RAMDAC, up to 2048 x 1536 @75 Hz (QXGA) including 1920 x 1080 @ 85 Hz (HDTV)		
	DVI Resolution	2x Intel compliant SDVO port	t, 1920 x 1080	
Slide-in Compact		1 slot equipped according to model and operating system Not equipped for models running Windows® Embedded Standard 2009 and Windows® Embedded Standard 7 Premium (32 bit) HDD or Flash drive for models running Windows® XP Professional or Windows® 7 Ultimate (32 bit)		
Compact Flash		 1 slot type 1 equipped according to model and Operating system 2 GB or 4 GB CF for models running Windows® Embedded Standard 2009 Not equipped for models running Windows® XP Professional or Windows® 7 		
Slide-in Drive		None	 1 slide-in equipped with one of the following: DVD-RW on cataloged PN, or DVD-RW or HDD or SSD or drive adapter also available on configured PN 	
SRAM		512 KB, battery backup		

Element	Characteristics		
	0 slot	2 slots	
Reset Button	Yes		
Buzzer	Yes		
15" Panel PC Weight	Approximately 8 kg (17.64 lbs)	Approximately 9 kg (19.84 lbs)	
19" Panel PC Weight	Approximately 11 kg (24.25 lbs)	Approximately 14 kg (30.86 lbs)	

Performance Product Characteristics

The characteristics of the Performance Panel PC models are shown below:

Element		Characteristics		
		0 slots	2 slots	
Expansion Slots		-	1 PCI + 1 PCIe on cataloged Part Number 2 PCI also available on configured Part Number	
Intel Chips Processor	et and	GM45 + Core2Duo P8400@2.26 GHz + 3 MB cache		
Cooling Me	ethod	Passive heat sink and fan-kit with filter		
RAM		DDR3 1067 MHz - 2 GB to 8 GB max		
Graphics	Controller	Intel® Graphics Media Acceler	ator (GMA) 4500 MHD	
	Video Memory	Up to 384 MB (reserved from main memory)		
	Color depth	32 bit (maximum)		
	RGB Resolution	300 MHz RAMDAC, up to 2048 x 1536 @75 Hz (QXGA) including 1920 x 1080 @ 85 Hz (HDTV)		
	DVI Resolution	2x Intel compliant SDVO port, 1920 x 1080		
Slide-in Compact		 1 slot equipped according to model and operating system Not equipped for models running Windows® Embedded Standard 2009 and Windows® Embedded Standard 7 Premium (32 bit) HDD or Flash drive for models running Windows® XP Professional or Windows® 7 		
Compact Flash		 1 slot type 1 equipped according to model and Operating system 2 GB or 4 GB CF for models running Windows® Embedded Standard 2009 Not equipped for models running Windows® XP Professional or Windows® 7 		

Element	Characteristics		
	0 slots	2 slots	
Slide-in Drive	None	 1 slide-in equipped with one of the following: DVD-RW on cataloged PN DVD-RW or HDD or SSD also available on configured PN 	
SRAM	512 KB, battery backup		
Reset Button	Yes		
Buzzer	Yes		
15" Panel PC Weight	Approximately 8 kg (17.64 lbs)	Approximately 9 kg (19.84 lbs)	
19" Panel PC Weight	Approximately 11 kg (24.25 lbs)	Approximately 14 kg (30.86 lbs)	

Display Characteristics

Element	15" Screen Size	19" Screen Size
Graphics	XGA TFT active matrix (1024 x 768 pixels)	SXGA TFT active matrix (1280 x 1024 pixels)
Brightness	350 cd/m ²	300 cd/m ²
Number of Colors	16 million	
Brightness Control	Step less adjustment	
View Angle	Vertical 100°, horizontal 160° Typ.	
Touch Sensitive Screen	Analog resistive film, resolution 4096 x 4096	
Backlight	LED - Life span > 50,000 h @ 25 °C (77 °F)	LED - Life span > 50,000 h @ 25 °C (77 °F)

DC Power Supply

The following table describes the DC power supply for HMI P•••D•••• and HMI PCCP•••••D•••••• Panel PC references:

Element	Characteristics
Rated Voltage	24 Vdc ±25 %
Power Consumption	130 W (max.)
Rated Current	6770 mA (max.)
Inrush Current	Typical 7 A, max. 50 A < 300 μs
Battery Backup	Opional UPS

AC Power Supply

The following table describes the DC power supply for HMI P•••A•••• and HMI PCCP••••A••••• Panel PC references:

Element	Characteristics
Rated Voltage	100 - 240 Vac
Power Consumption	130 W (max.)
Frequency	60/50 Hz
Rated Current	1.6 A (max.)
Inrush Current	Typical 40 A

Operating Systems

The products are delivered with a preinstalled operating system according to the reference ordered:

Operating Systems	Cataloged Part Number	Configured Part Number
Windows® 7 Ultimate (64 bit)	HMI P•••••7••	HMIPCC ••••••6•••••
Windows® 7 Ultimate (32 bit)	_	HMIPCC •••••5•••••
Windows® Embedded Standard 7 Premium (32 bit)	_	HMIPCC ••••••4•••••
Windows® XP Professional SP3	HMI P•••••P••	HMIPCC ••••••3•••••
Windows® Embedded Standard 2009	HMI P****E**	HMIPCC ••••••1••••••

Panel PC Interface Characteristics

Serial Interface

Element	Characteristics
Amount	2
Туре	RS-232C, modem-capable, not electrically isolated
UART	16550-compatible, 16-byte FIFO
Transfer Rate	Maximum 115 kbps
Connection	D-Sub 9-pin, male (see page 102)

USB Interface

Element	Characteristics
Туре	USB 2.0
Amount	5 (4 top side and 1 front side)
Transfer Rate	Low speed (1.5 Mbit/s), full speed (12 Mbit/s), to high speed (480 Mbit/s)
Connection	Type A (see page 101)
Current load	Maximum 500 mA per connection for USB2, USB4 Maximum 1 A per connection for USB1, USB3, USB5

Ethernet Interface

Element	Characteristics
Amount	2 x RJ45
Speed	10/100/1000 Mbit/s

Environmental Characteristics

Characteristics

The environmental characteristics of the Panel PC are as follows:

Characteristics	Value	Standards	
Degree of Protection	IP65	EN/IEC 61131-2	
Pollution Degree	For use in Pollution Degree 2 environment	EN/IEC 61131-2	
Surrounding air temperature during operation	050 °C (32122 °F) 045 °C (32113 °F): ■ when using RAID option ■ when using Gigabit Ethernet on products with HDD storage device 545 °C (41113 °F):	EN/IEC 61131-2, UL 508	
Otomoro tomoromotomo	• when using DVD writer	IFO cooca a a tarta Ph	
Storage temperature	– 2060 °C (– 4140 °F)	IEC 60068-2-2 tests Bb, IEC 60068-2-14 tests Na	
Operating altitude	2000 m (6560 ft) max	EN/IEC 61131-2	
Vibration		IACS E10 and EN/IEC 60068-2-6 Fc	
Operation (continuous) for products with SSD or CF card storage device.	29 Hz: 1.75 mm (0.07 in.) 9200 Hz: 0.5 g		
Operation (continuous) for products with HDD storage device.	5100 Hz: 0.125 g		
Operation (occasional) for products with SSD or CF card storage device.	29 Hz: 3.5 mm (0.14 in.) 9200 Hz:1 g		
Operation (occasional) for products with HDD storage device.	5100 Hz: 0.250 g		
Merchant navy (continuous)	313.2 Hz: 1 mm (0.04 in.) 13.2100 Hz: 0.7 g		
Shock Resistance (in operation)	15 g for a duration of 11 ms	IEC 60068-2-27 Ea test	
Surrounding air humidity during operation	1085 % RH (Wet bulb temperature: 29 ° C (84.2 ° F) max no condensation)	EN/IEC 60068-2-78 Cab	
NOTE: IEC 61131-2 and IP65 are not part of UL certification for hazardous locations.			

Characteristics	Value	Standards
Storage humidity	1085 % RH (Wet bulb temperature: 29 ° C (84.2 ° F) max no condensation)	EN/IEC 60068-2-30 Db
Electromagnetic Compatibility (EMC)	Immunity to High Frequency Interference	EN/IEC 61131-2, IEC 61000-4-x
	Electromagnetic Emissions Class A	EN 55022, EN 55011
NOTE: IEC 61131-2 and IP65 are not part of UL certification for hazardous locations.		

Dimensions/Assembly

4

Subject of this Chapter

This chapter describes Panel PC dimensions and installation panels.

What Is in This Chapter?

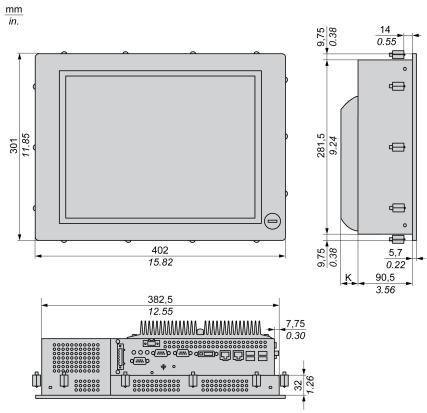
This chapter contains the following topics:

Topic	Page
Panel PC 15" Dimensions	66
Panel PC 19" Dimensions	71
Installation Requirements	76
Panel PC Installation	80

Panel PC 15" Dimensions

DC Panel PC 15" - 0 Slot Dimensions

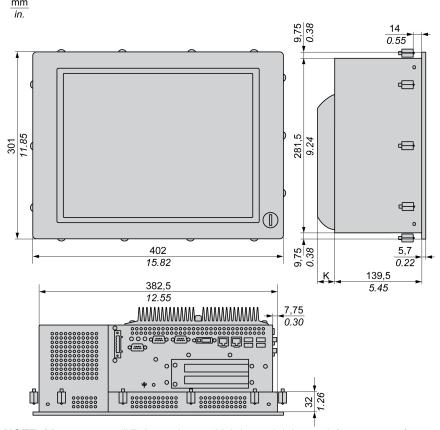
The following figure shows the dimensions of the DC Panel PC 15" with 0 slot:



NOTE: Measurement "K" depends on which heat sink is used (see page 69).

DC Panel PC 15" - 2 Slots Dimensions

The following figure shows the dimensions of the DC Panel PC 15" with 2 slots:

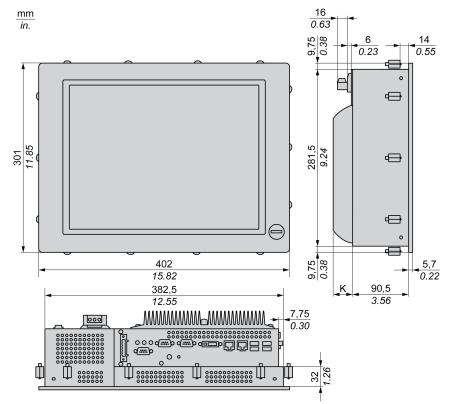


NOTE: Measurement "K" depends on which heat sink is used (see page 69).

NOTE: No front USB for stainless steel panels.

AC Panel PC 15" - 0 Slot Dimensions

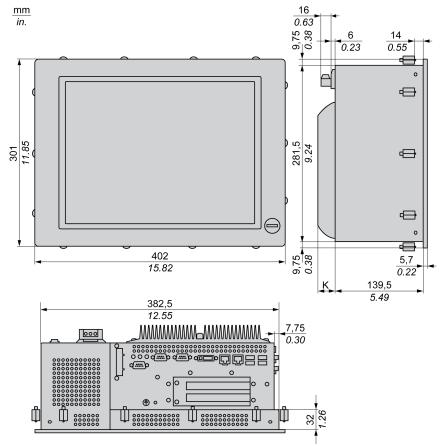
The following figure shows the dimensions of the AC Panel PC 15" with 0 slot:



NOTE: Measurement "K" depends on which heat sink is used (see page 69).

AC Panel PC 15" - 2 Slots Dimensions

The following figure shows the dimensions of the AC Panel PC 15" with 2 slots:



NOTE: Measurement "K" depends on which heat sink is used (see page 69).

NOTE: No front USB for stainless steel panels.

Values

The following table provides the "K" measurement value depending on which heat sink is used:

Panel PC Range	"K" Value
Performance (0 or 2 slots Panel PC)	28 mm (1.103 in.)
Universal (0 or 2 slots Panel PC)	12.8 mm (0.503 in.)

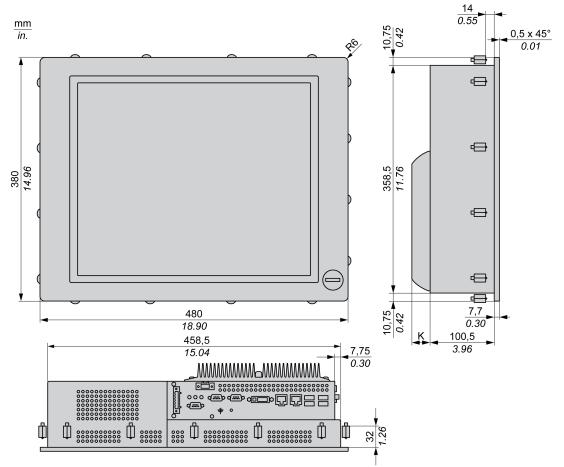
The following table shows the general tolerance for the Panel PC dimensions:

Nominal Measurement	General Tolerance acc. DIN ISO 2768 Medium
up to 6mm (up to 0.236 in.)	±0.1 mm (±0.004 in.)
over 6 to 30 mm (over 0.236 to 1.181 in.)	±0.2 mm (±0.0078 in.)
over 30 to 120 mm (over 1.18 to 4.724 in.)	±0.3 mm (±0.012 in.)
over 120 to 400 mm (over 4.724 to 15.747 in.)	±0.5 mm (±0.02 in.)
over 400 to 1000 mm (over 15.747 to 39.37 in.)	±0.8 mm (±0.031 in.)

Panel PC 19" Dimensions

DC Panel PC 19" - 0 Slot Dimensions

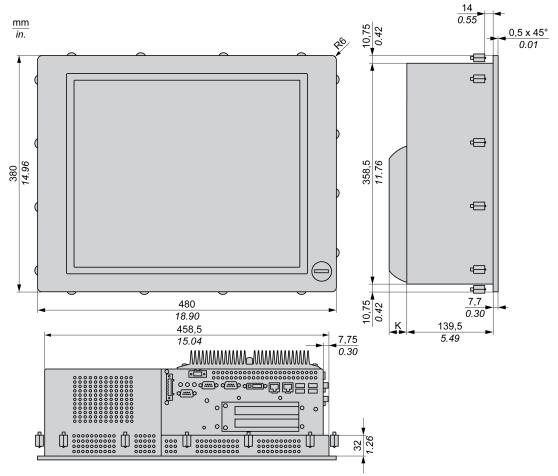
The following figure shows the dimensions of the DC Panel PC 19" with 0 slot:



NOTE: Measurement "K" depends on which heat sink is used (see page 75).

DC Panel PC 19" - 2 Slots Dimensions

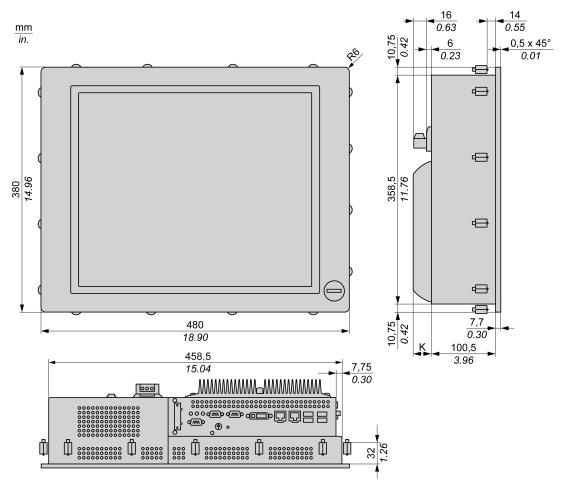
The following figure shows the dimensions of the DC Panel PC 19" with 2 slots:



NOTE: Measurement "K" depends on which heat sink is used (see page 75).

AC Panel PC 19" - 0 Slot Dimensions

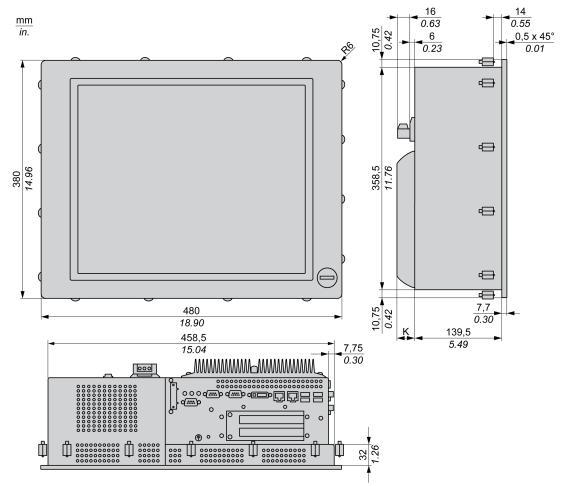
The following figure shows the dimensions of the AC Panel PC 19" with 0 slot:



NOTE: Measurement "K" depends on which heat sink is used (see page 75).

AC Panel PC 19" - 2 Slots Dimensions

The following figure shows the dimensions of the AC Panel PC 19" with 2 slots:



NOTE: Measurement "K" depends on which heat sink is used (see page 75).

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Values

The following table provides the "K" measurement value depending on which heat sink is used:

Panel PC Range	"K" Value
Performance (0 or 2 slots Panel PC)	28 mm (1.103 in.)
Universal (0 or 2 slots Panel PC)	12.8 mm (0.503 in.)

The following table shows the general tolerance for the Panel PC dimensions:

Nominal Measurement	General Tolerance acc. DIN ISO 2768 Medium
up to 6 mm (up to 0.236 in.)	±0.1 mm (±0.004 in.)
630 mm (0.2361.181 in.)	±0.2 mm (±0.0078 in.)
30120 mm (1.184.724 in.)	±0.3 mm (±0.012 in.)
120400 mm (4.72415.747 in.)	±0.5 mm (±0.02 in.)
4001000 mm (15.74739.37 in.)	±0.8 mm (±0.031 in.)

Installation Requirements

Important Mounting Information

Overheating can cause incorrect software behavior, therefore:

- Ensure that environmental characteristics (see page 63) are respected.
- The Panel PC is only permitted for operation in closed rooms.
- The Panel PC cannot be situated in direct sunlight.
- The Panel PC vent holes must not be covered.
- When mounting the Panel PC, adhere to the allowable mounting angle.

A WARNING

UNINTENDED EQUIPMENT OPERATION

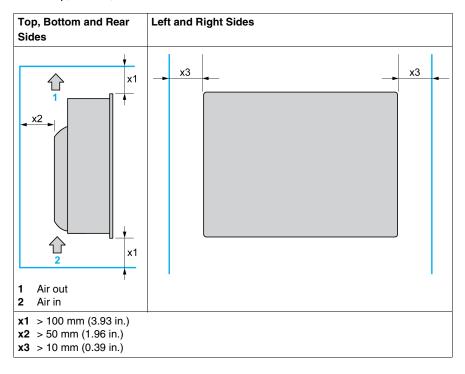
- Do not place the Panel PC next to other devices that might cause overheating.
- Keep the Panel PC away from arc-generating devices such as magnetic switches and non-fused breakers.
- Avoid using the Panel PC in environments where corrosive gases are present.
- Install the Panel PC in a location providing a minimum clearance of 10 mm (0.39 in.) or more on the left and right sides, 50 mm (1.96 in.) or more on the rear side, and 100 mm (3.93 in.) or more above and below the product from all adjacent structures and equipment.
- Install the Panel PC with sufficient clearance to provide for cable routing and cable connectors.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

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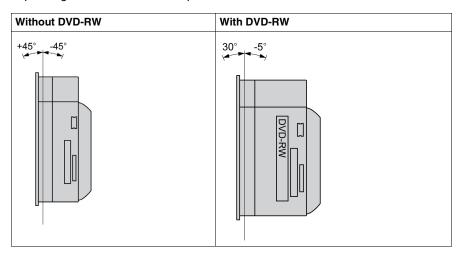
Spacing Requirements

In order to provide sufficient air circulation, mount the Panel PC so that the spacing on the top, bottom, and sides is as follows:



Mounting Orientation

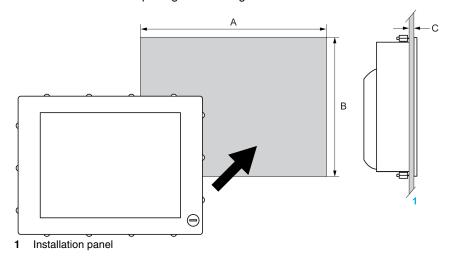
The following figures shows the allowable mounting orientation for the Panel PC depending on the slide-in slot 1 option:



Panel Cut Dimensions

For cabinet installation, you need to cut the correct sized opening in the installation panel.

The dimensions of the opening for installing the Panel PC are shown below:



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Panel PC Cut-out	A	В	С
15"	383.5 +1/0 mm (15.10 +0.04/0 in.)	282.5 +1/0 mm (11.12 +0.04/0 in.)	1.610 mm (0.060.39 in.)
19"	459.5 ±0.5 mm (18.09 ±0.02 in.)	359.5 ±0.5 mm (14.15 ±0.02 in.)	

NOTE:

- Ensure the thickness of the installation panel is from 1.6 to 10 mm (0.06 to 0.39 in.).
- All installation panel surfaces used should be strengthened. Due consideration should be given to the weight of the Panel PC, especially if high levels of vibration are expected and the installation panel can move. Attach metal reinforcing strips to the inside of the panel near the panel cut-out, to increase the strength of the installation panel.
- Ensure all installation tolerances are maintained.
- The Panel PC is designed for use on a flat surface of a Type 4X enclosure (Indoor use only).

Panel PC Installation

Vibration and Shocks

Extra care should be taken with respect to vibration levels when installing or moving the Panel PC. If the Panel PC is moved, for example, while it is installed in a rack equipped with caster wheels, it can receive excessive shock and vibration.

A CAUTION

EXCESSIVE VIBRATION

- Plan your installation activities so that shock and vibration tolerances in the unit are not exceeded.
- Ensure that the installation panel opening and thickness are within the specified tolerances.
- Before mounting the Panel PC into a cabinet or panel, ensure that the installation gasket is in place. The installation gasket provides additional protection from vibration.
- Tighten the installation fasteners using a torque of 0.5 Nm (4.5 lb-in).

Failure to follow these instructions can result in injury or equipment damage.

Installation Gasket

Use of the installation gasket may help extend the operating life of your Panel PC. The gasket is required to meet the protection ratings (IP65, IP20, NEMA4) of the Panel PC and provides additional protection from vibration.

NOTE: NEMA4 or Type 4 is not part of UL certification.

Even if moisture protection is not required, install the gasket delivered with your Magelis product.

NOTE: The installation gasket is replaceable only for stainless steel Panel PC.

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A CAUTION

LOSS OF SEAL

- Inspect the gasket prior to installation or reinstallation, and periodically as required by your operating environment.
- Replace the gasket or the complete Panel PC if visible scratches, tears, dirt, or excessive wear are noted during inspection.
- Do not stretch the gasket unnecessarily or allow the gasket to contact the corners or edges of the frame.
- Ensure that the gasket is fully seated in the installation groove.
- Install the Panel PC into a panel that is flat and free of scratches or dents.
- Tighten the installation fasteners using a torque of 0.5 Nm (4.5 lb-in).

Failure to follow these instructions can result in injury or equipment damage.

For stainless steel Panel PC, the installation gasket is provided in the maintenance kit: reference HMIYPNKT11.

Installing the Panel PC Unit

The installation gasket and installation fasteners are required when installing the Panel PC.

Follow the steps shown below when installing the Panel PC:

Step	Action
1	Check that the gasket is correctly attached to the Panel PC. NOTE: When checking the gasket, avoid contact with the sharp edges of the Panel PC frame, and insert it completely into its groove.
2	Install the Panel PC in the panel opening (see page 78).

Step Action 3 Insert each installation fastener securely into the slots at the top, bottom, left and right side of the Panel PC: The number of slots is screen size dependent: • 14 slots for the 15" Panel PC. • 18 slots for the 19" Panel PC. NOTE: You can purchase the installation fasteners as spare parts with the maintenance kit: reference HMIYPNKT11. NOTE: When mounting a stainless steel panel using installation fasteners from maintenance kit, make sure to use appropriate stainless steel installation fasteners (identified in separate bag). 4 Insert each fastener in its corresponding slot as shown in the figure below:

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Step	Action
5	Pull the fastener back until it is flush with the rear of the fastener hole:
6	Use a 2,5 hexagon head screwdriver to tighten each of the fastener screws and secure the Panel PC in place: NOTE: To ensure a high degree of moisture resistance, use a torque of 0.5 Nm (4.5 lb-in).
7	Ensure that the angle is tilted no more than mounting orientation requirements allow (see page 78).

A CAUTION

OVERTORQUE AND LOOSE HARDWARE

- Do not exert more than 0.5 Nm (4.5 lb-in) of torque when tightening the installation fastener, enclosure, accessory, or terminal block screws. Tightening the screws with excessive force can damage the plastic installation fastener.
- When installing or removing screws, ensure that they do not fall inside the Panel PC chassis.

Failure to follow these instructions can result in injury or equipment damage.

NOTE: The screw installation fasteners are required for NEMA4 protection. NEMA4 or Type 4 is not part of UL certification.

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Implementation



Subject of this Part

This part describes setting up the product.

What Is in This Part?

This part contains the following chapters:

Chapter	Chapter Name	Page
5	Getting Started	87
6	Panel PC Connections	89
7	Configuration of the BIOS	105
8	Hardware Modifications	123

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First Power-up

License Agreement

Limitations on your usage of the Microsoft Windows Operating System are noted in Microsoft's End User License Agreement (EULA). This EULA is included on the DVD-ROM. Read this document before first powering-up.

On first power-up of your HMIPP•••••• or HMIPU••••••, to customize and set the parameters for your system, refer to the Magelis Installation Guide.

Install and customize the Schneider Electric applications (Vijeo Designer, Vijeo Designer Lite, OFS).

EWF Manager (Enhanced Write Filter Manager)

The Magelis Panel PC HMIPUC•••••• operating system, Windows® Embedded Standard 2009, is installed on a memory card. This card is a re-writable Compact Flash card that allows approximately 100,000 write operations.

The EWF Manager (Enhanced Write Filter Manager) minimizes the number of write operations to help extend the life of the CF Card. It loads temporary data (for example, system updates and software operations) into RAM, and does not write this information to the CF Card.

As a result, when using the EWF Manager, restarting the Panel PC causes any changes the user made to the system to be overwritten. The following types of modifications may be overwritten if the EWF Manager is active and the system is restarted:

- Newly installed applications.
- Newly installed peripherals.
- Newly created or modified user accounts.
- Network configuration changes (e.g. IP address, default gateway, and so on).
- Operating System customizations (e.g.background pictures, and so on).

NOTICE

DATA AND CONFIGURATION LOSS

- Disable the EWF Manager before making any permanent changes to the hardware, software, or Operating System of the Panel PC. Confirm that the EWF icon in the Windows system tray has a red "X".
- Re-enable the EWF Manager after making permanent changes and confirm that
 the EWF icon in the Windows system tray does not have a red "X". This can help
 extend the operating life of the CF Card.
- Back up all CF Card data regularly to another storage media.

Failure to follow these instructions can result in equipment damage.

Enabling/Disabling the EWF Manager

The status of the EWF Manager may be changed by running the ChangeEWFState.exe program located in the C:\Program Files\Change EWF State\directory. After running this program, you need to restart the system for the change to take effect. You need administrator privileges to enable and disable the EWF Manager.

Right Click from Touch Screen Interface

To access **Right-click** function from the touch screen, keep touching the screen for 2 seconds and the corresponding **Right-click** function will be activated (for instance, menu will be displayed).

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Subject of this Chapter

This chapter describes the connection of the Panel PC to the main power supply. It also describes the USB ports and identifies the serial interface pin assignment.

What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
Grounding	90
Connecting the DC Power Cord	95
Connecting the AC Power Cord	98
Panel PC Interface Connections	100

Grounding

Overview

The grounding resistance between the Panel PC ground and the ground must be $100~\Omega$ or less. When using a long grounding wire, check the resistance and, if required, replace a thin wire with a thicker wire and place it in a duct. In addition, refer to the table below for maximum lengths of various wire thicknesses.

Ground Wire Dimensions

Wire Cross-section	Maximum Line Length	
2.5 mm ² (AWG 13)	30 m (98 ft)	
	60 m (196 ft) round trip.	

Precaution

WARNING

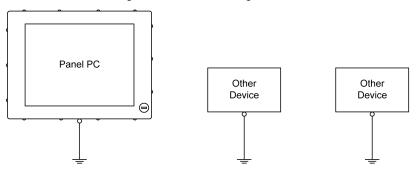
UNINTENDED EQUIPMENT OPERATION

- Use only the authorized grounding configurations shown below.
- Confirm that the grounding resistance is 100 Ω or less.
- Test the quality of your ground connection before applying power to the device. Excess noise on the ground line can disrupt operations of the Panel PC.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Dedicated Ground

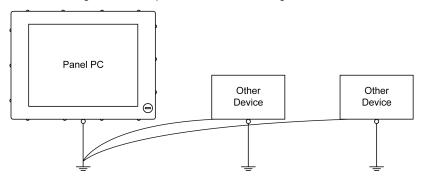
Connect the Panel PC ground to a dedicated ground:



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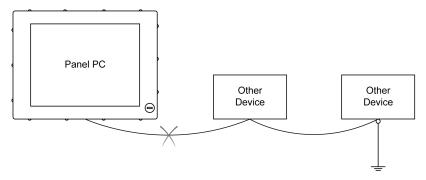
Shared Ground Allowed

If a dedicated ground is not possible, use a shared ground, as shown below:



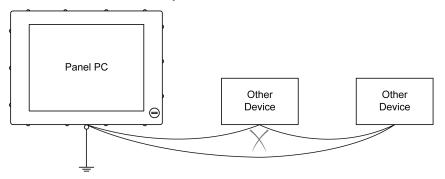
Shared Ground not Allowed

Do not connect the Panel PC to ground through other devices using shared ground terminals:



Shared Ground - Avoid Ground Loop

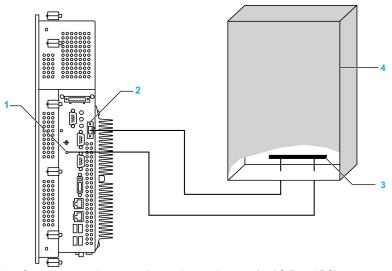
When connecting an external device to a Panel PC with the shield ground (SG), ensure that a ground loop is not created. The Panel PC's ground connection screw and SG are connected internally.



Grounding Procedure

The Panel PC ground has 2 connections:

- Supply voltage
- Ground connection screw



- 1 Ground connection screw (protective earth screw for AC Panel PC)
- 2 Supply voltage
- 3 Grounding strip
- 4 Switching cabinet

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When grounding, follow the procedure below:

Step	Action
1	Check that the grounding resistance is 100 Ω or less.
2	When connecting the SG line to another device, ensure that the design of the system/connection does not produce a ground loop. NOTE: The SG and ground connection screw are connected internally in the Panel PC.
3	Use 2.5 mm ² (AWG 13) wire to make the ground connection. Create the connection point as close to the Panel PC as possible and make the wire as short as possible.

Grounding I/O Signal Lines

A DANGER

EXPLOSION HAZARD

- Always confirm the ANSI/ISA 12.12.01 and CSA C22.2 N° 213 hazardous location rating of your device before installing or using it in a hazardous location.
- To power on or power off a Panel PC installed in a Class I, Division 2 hazardous location, you must either:
 - Use a switch located outside the hazardous environment, or
 - Use a switch certified for Class I, Division 1 operation inside the hazardous area.
- Do not connect or disconnect equipment unless power has been switched off or the area is known to be non-hazardous. This applies to all connections including power, ground, serial, parallel, and network connections.
- Never use unshielded / ungrounded cables in hazardous locations.
- Use only non-incentive USB configuration.
- When enclosed, keep enclosure doors and openings closed at all times to avoid the accumulation of foreign matter inside the workstation.

Failure to follow these instructions will result in death or serious injury.

Electromagnetic radiation may interfere with the control communications of the Panel PC.

A WARNING

UNINTENDED EQUIPMENT OPERATION

- If wiring of I/O lines near power lines or radio equipment is unavoidable, use shielded cables and ground one end of the shield to the Panel PC ground connection screw.
- Do not wire I/O lines in proximity to power cables, radio devices, or other equipment that may cause electromagnetic interference.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

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Connecting the DC Power Cord

Precaution

When connecting the power cord to the power connector on the Panel PC, first ensure that the power cord is disconnected from the DC power supply.

A A DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Unplug the power cable from both the Panel PC and the power supply.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace and secure all covers or elements of the system before applying power to the unit.
- Use only the specified voltage when operating the Panel PC. The AC unit is designed to use 100...240 Vac input. The DC unit is designed to use 24 Vdc. Always check whether your device is AC or DC powered before applying power.

Failure to follow these instructions will result in death or serious injury.

A WARNING

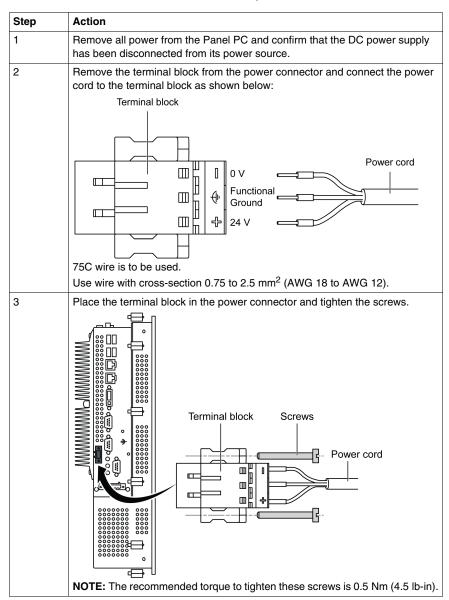
UNINTENDED EQUIPMENT OPERATION

- Ensure that power, communication, and accessory connections do not place excessive stress on the ports. Consider the vibration environment when making this determination.
- Securely attach power, communication, and external accessory cables to the panel or cabinet.
- Use only commercially available USB cables.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Wiring and Connecting the Terminal Block

The table below describes how to connect the power cord to the DC Panel PC:



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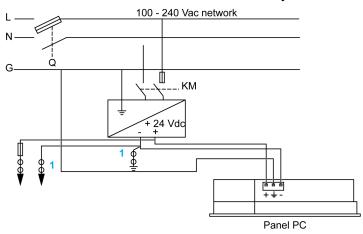
Marine Certification Connection

If the product is used in an environment requiring marine certification, a power line filter must be in the power line.

The line filter must be ordered in addition to the product using the reference HMIYLFIMAR11.

Possible Connection

Connection to a Ground-Referenced DC Power System:



Q: Main Power Contact **KM**: Line contacts

1 : Residual Current Detector for detecting grounding faults

Connecting the AC Power Cord

Precaution

When connecting the power cord to the power connector on the Panel PC, first ensure that the power cord is disconnected from the AC power supply.

A A DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Unplug the power cable from both the Panel PC and the power supply.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace and secure all covers or elements of the system before applying power to the unit.
- Use only the specified voltage when operating the Panel PC. The AC unit is designed to use 100...240 Vac input. The DC unit is designed to use 24 Vdc. Always check whether your device is AC or DC powered before applying power.

Failure to follow these instructions will result in death or serious injury.

A WARNING

EQUIPMENT DISCONNECTION OR UNINTENDED EQUIPMENT OPERATION

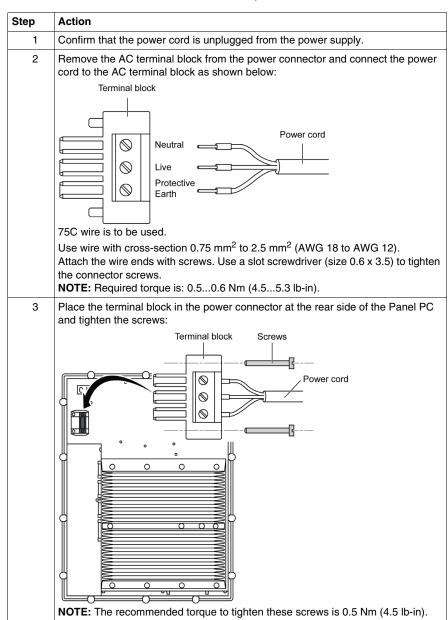
- Ensure that power, communication, and accessory connections do not place excessive stress on the ports. Consider the vibration environment when making this determination.
- Securely attach power, communication, and external accessory cables to the panel or cabinet.
- Use only commercially available USB cables.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

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Wiring and Connecting the Terminal Block

The table below describes how to connect the power cord to the AC Panel PC:



Panel PC Interface Connections

Introduction

The information below describes usage of the interface connections of the Magelis Panel PC in Class I, Division 2 Groups A, B, C, and D hazardous locations.

A DANGER

EXPLOSION HAZARD

- Always confirm the ANSI/ISA 12.12.01 and CSA C22.2 N° 213 hazardous location rating of your device before installing or using it in a hazardous location.
- To power on or power off a Panel PC installed in a Class I, Division 2 hazardous location, you must either:
 - Use a switch located outside the hazardous environment, or
 - Use a switch certified for Class I, Division 1 operation inside the hazardous area.
- Do not connect or disconnect equipment unless power has been switched off or the area is known to be non-hazardous. This applies to all connections including power, ground, serial, parallel, and network connections.
- Never use unshielded / ungrounded cables in hazardous locations.
- Use only non-incentive USB configuration.
- When enclosed, keep enclosure doors and openings closed at all times to avoid the accumulation of foreign matter inside the workstation.

Failure to follow these instructions will result in death or serious injury.

A WARNING

EQUIPMENT DISCONNECTION OR UNINTENDED EQUIPMENT OPERATION

- Ensure that power, communication, and accessory connections do not place excessive stress on the ports. Consider the vibration environment when making this determination.
- Securely attach power, communication, and external accessory cables to the panel or cabinet.
- Use only commercially available USB cables.

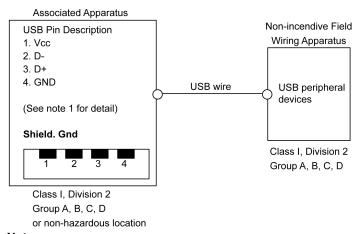
Failure to follow these instructions can result in death, serious injury, or equipment damage.

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USB Connections

Non-incentive equipment (keyboards, mouse) are permitted for use on the Panel PC (Associated Apparatus) USB ports 1, 2, 3, 4 and front USB 5. In addition to being non-incentive, any equipment connected to the USB ports 1, 2, 3, 4 and front USB 5 must satisfy the following criteria.

The following figure shows the USB cable wiring:



Notes:

1. The following table gives the Non-incentive Circuit Parameters:

Circuit Parameters	USB ports 1 and 3	USB ports 2 and 4	USB port 5 (front USB)
Open-circuit voltage = V _{oc}	5.066 V	5.26 V	5.089 V
Short-circuit current = I _{sc}	1320 mA	830 mA	1322 mA
Associated capacitance = C _a	20 μF	20 μF	20 μF
Associated inductance = L _a	16.8 μΗ	16.8 μΗ	16.8 μΗ

The Entity Concept allows interconnection of non-incendive apparatus with associated apparatus – not specifically examined combinations – as a system when the approved values of V_{oc} (or $U_o)$ and I_{sc} (or $I_o)$ for the associated apparatus are less than or equal to Vmax (U_i) and Imax (I_i) for the non-incendive apparatus, and the approved values of C_a (C_o) and L_a (L_o) for the associated apparatus are greater than or equal to C_i + C_{cable} and L_i + L_{cable} , respectively, for the non-incendive field wiring apparatus.

2. Associated Non-incendive Field Wiring Apparatus shall satisfy the following:

Magelis Panel PC	-	Associated Non-incendive Field Wiring Apparatus (Mouse, Keyboard)
V _{oc} I _{sc} C _a L _a	< < < < < < < < < < < < < < < < < < <	V_{max} I_{max} $C_i + C_{cable}$ $L_i + L_{cable}$

- 3. If the electrical parameters of the cable are unknown, the following values may be used:
- C_{cable} = 196.85 pF/m (60 pF/ft)
- $L_{cable} = 0.656 \, \mu H/m \, (0.20 \, \mu H/ft)$
- 4. Wiring methods must be in accordance with the electrical code of the country in use.

The Panel PC must be installed in an enclosure. If installed in a Class I, Division 2 Location, the enclosure must be capable of accepting one or more Division 2 wiring methods.

A DANGER

EXPLOSION HAZARD

- Substitution of components may impair suitability for Class I, Division 2.
- Do not energize or disconnect the device while area is known to be hazardous.
- The associated non-incendive field wiring apparatus shall not be connected in parallel unless permitted by the associated non-incendive apparatus approval.

Failure to follow these instructions will result in death or serious injury.

The Panel PC is suitable for use in Class I, Division 2, Groups A, B, C, D and provides non-incendive field wiring to apparatus in Class I, Division 2, Groups A, B, C, D.

Serial Interface Connections

This interface is used to connect Panel PC to remote equipment, via an RS-232C cable. The connector is a D-Sub 9-pin male connector.

By using a long PLC cable to connect to the Panel PC, it is possible that the cable can be at a different electrical potential than the panel, even if both are connected to ground.

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The Panel PC serial port is not isolated. The SG (signal ground) and the functional ground (FE) terminals are connected inside the panel.

A A DANGER

ELECTRIC SHOCK

- Make a direct connection between the ground connection screw and ground.
- Do not connect other devices to ground through the ground connection screw of this device.
- Install all cables according to local codes and requirements. If local codes do not require grounding, follow a reliable guide such as the US National Electrical Code, Article 800.

Failure to follow these instructions will result in death or serious injury.

The following table shows the D-Sub9 pin assignments:

Pin	Assignment	
1	DCD	D-Sub9 pin male connector:
2	RXD	1 5 I I
3	TXD	
4	DTR	
5	GND	
6	DSR	6 9
7	RTS	
8	CTS	
9	RI	

Any excessive weight or stress on communication cables may disconnect the equipment.

A CAUTION

LOSS OF POWER

- Ensure that communication connections do not place excessive stress on the communication ports of the Panel PC.
- Securely attach communication cables to the panel or cabinet.
- Use only D-Sub 9 pin cables with a locking system in good condition.

Failure to follow these instructions can result in injury or equipment damage.

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What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
BIOS Options	106
Main Menu	109
Advanced Menu - USB Configuration	111
Boot Menu	115
Security Menu	118
Exit Menu	121

BIOS Options

General Information

BIOS stands for "Basic Input Output System". It is the most basic communication between the user and the hardware. The BIOS used in the Panel PC is produced by Schneider Electric.

The BIOS Setup Utility lets you modify basic system configuration settings. These settings are stored in CMOS and in an EEPROM (as a backup).

The CMOS data is buffered by a battery (if present), and remains in the Panel PC even when the power is turned off (24 Vdc power supply is disconnected).

BIOS Setup and Boot Procedure

BIOS is immediately activated when switching on the power supply of the Panel PC or pressing the power button. The system checks if the setup data from the EEPROM is OK. If the data is OK, then it is transferred to CMOS. If the data is not OK, then the CMOS data is checked for validity. A message appears if the CMOS data contains anomalies, but you can continue the boot procedure by pressing the [F1] key. To prevent the message from appearing at each restart, open the BIOS setup by pressing the [DEL] key and re-save the settings.

BIOS reads the system configuration information in CMOS RAM, checks the system, and configures it using the Power On Self Test (POST).

When these preliminaries are complete, the BIOS seeks the operating system from the data storage devices available (hard drive, floppy drive, and so on). BIOS launches the operating system and hands over to the operating system control of system operations.

To enter BIOS Setup, press the [DEL] key after the USB controller has been initialized, and as soon as the following message appears on the monitor (during POST): "Press DEL to run Setup".

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The following figure shows an example Universal BIOS startup screen:

```
AMIBIOS(C) 2005 American Megatrends, Inc.
[APC4R113] Schneider Automation =S=MPC2610092210
CPU : Intel(R) Atom(TM) CPU N270 @ 1.60GHz
 Speed: 1.60 Ghz
Press DEL to run Setup
Press F11 for BBS POPUP
The MCH is operating with DDR2-677/CL5 in Dual-Channel Interleaved Mode
Initializing USB Controllers .. Done
2048MB OK
USB Device(s): 1 Keyboard, 1 Hub
Auto-Detecting Sec Master..IDE Hard Disk
Auto-Detecting Sec Slave...IDE Hard Disk
Sec Master : SILICONSYSTEMS INC 4GB 240-0230
Sec Slave : SILICONSYSTEMS INC 4GB 240-0230
Auto-Detecting USB Mass Storage Devices ...
00 USB mass storage devices found an configured.
```

The following figure shows an example Performance BIOS startup screen:

NOTE: When you press the [DEL] key during startup, the Main BIOS setup menu appears (see page 109).

BIOS Setup Keys

The following keys are enabled during the POST:

Key	Function	
DEL	Enters the BIOS setup menu	
F12	Using the [F12] key, you can boot from the network.	

Key	Function	
F11	Displays the boot menu. Lists all bootable devices that are connected to the system. Use the up cursor ↑ and down cursor ↓ and then press the [Enter] key to select the boot device. Please select boot device: SATA : PM-ST940817SM HDD: SM-SILCONSYSTEMS INC 512MB ↑ and ↓ to move selection	
	ENTER to select boot device ESC to boot using defaults	
Pause	Pressing the [Pause] key stops the POST. Press any other key to resume the POST.	

NOTE: Keys input from the USB keyboard are only registered after the USB controller has been initialized.

You can use the following keys after entering the BIOS setup:

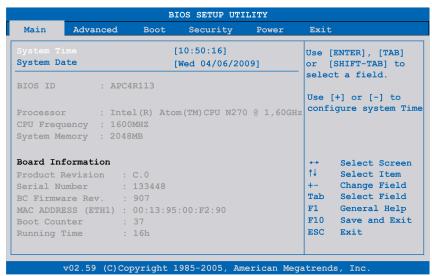
Key	Function
F1	General help.
Cursor ↑	Moves to the previous item.
Cursor ↓	Goes to the next item.
Cursor ←	Moves to the previous item.
Cursor →	Goes to the next item.
±	Changes the value of the selected item.
Enter	Changes to the selected menu.
PgUp ↑	Changes to the previous page.
PgDn ↓	Changes to the next page.
Start	Jumps to the first BIOS menu item or object.
End	Jumps to the last BIOS menu item or object.
F2/F3	Switches the colors of the BIOS setup.
F7	Resets any changes.
F9	Loads these settings for all BIOS configurations.
F10	Saves and closes BIOS setup.
Esc	Exits the submenu.

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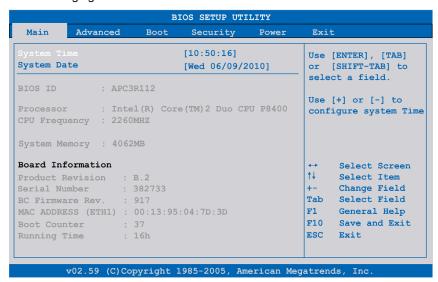
Main Menu

Main Menu

When you press the [DEL] key during startup, the **Main** BIOS setup menu appears. The following figure shows the **Main** menu for Universal Panel PC:



The following figure shows the **Main** menu for Performance Panel PC:

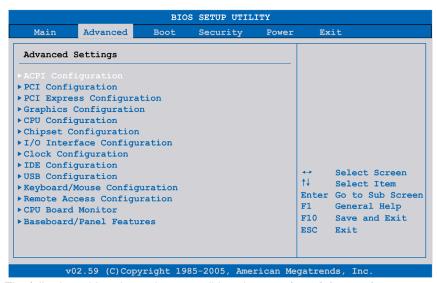


The following table shows the **Main** menu setting options:

BIOS Setting	Description	Setting Options	Effect
System Time	This is the current time setting. The time is maintained by the battery (CMOS battery) when the unit is turned off.	Change the time	Set the time using the format Hours:Minutes:Seconds (hh:mm:ss).
System Date	This is the current date setting. The time is maintained by the battery (CMOS battery) when the unit is turned off.	Change the date	Set the date using the format Month:Day:Year (mm:dd:yyyy).
BIOS ID	Displays the BIOS detected.	None	-
Processor	Displays the processor type	None	-
CPU Frequency	Displays the processor frequency	None	-
System Memory	Displays the system memory size	None	-
Product Revision	Displays the CPU board HW revision.	None	-
Serial Number	Displays the CPU board serial number.	None	-
BC Firmware Rev.	Displays the CPU board controller firmware revision.	None	-
MAC Adresse (ETH1)	Displays the MAC addresses assigned for the ETH1 interface.	None	-
Boot Counter	Displays the boot counter - each restart increments the counter by one (max. 16777215).	None	-
Running Time	Displays the running time in hours. (max. 65535).	None	-

Advanced Menu - USB Configuration

Advanced Menu

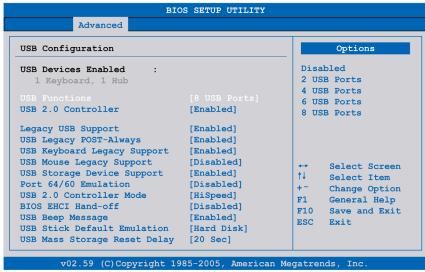


The following tables shows the accessible submenus from **Advanced** menu:

BIOS Setting	Description	Setting Options	Effect
ACPI Configuration Configures APCI devices.		Enter	Opens submenu
PCI Configuration	Configures PCI devices.	Enter	Opens submenu
PCI Express Configuration	Configures the PCI Express.	Enter	Opens submenu
Graphics Configuration	Configures the graphic settings.	Enter	Opens submenu
CPU Configuration	Configures CPU settings.	Enter	Opens submenu
Chipset Configuration	Configures the chipset functions.	Enter	Open submenu
I/O Interface Configuration	Configures the I/O devices.	Enter	Opens submenu
Clock Configuration	Configures clock settings.	Enter	Opens submenu
IDE Configuration	Configures the IDE functions.	Enter	Opens submenu
USB Configuration	Configures USB settings	Enter	Opens submenu (see page 112)
Keyboard/Mouse Configuration	Configures the keyboard/mouse options	Enter	Opens submenu
Remote Access Configuration	Configures the remote access settings.	Enter	Opens submenu

BIOS Setting	Description	Setting Options	Effect
CPU Board Monitor	Displays the current voltage and temperature of the processor	Enter	Opens submenu
Baseboard/Panel Features	Displays device specific information and setup of device specific values.	Enter	Opens submenu

USB Configuration Submenu



The following table shows the **USB Configuration** menu setting options:

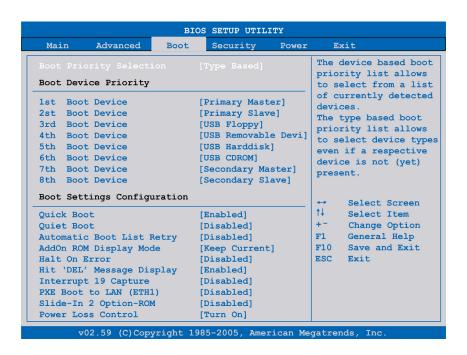
BIOS Setting	Description	Setting Options	Effect
USB Functions	You can enable or disable USB ports here.	Disabled	Disables the USB port.
	USB port numbers (for example, USB1, USB3, and so on) are printed on the Panel	2 USB Ports	USB1, USB3 are enabled.
	PC housing.	4 USB Ports	USB1, USB2, USB3, USB4, are enabled.
		5 USB Ports	USB1, USB2, USB3, USB4, USB5 are enabled.
USB 2.0 Controller	Option for enabling or disabling USB 2.0.	Enabled	All USB interfaces run in USB 2.0 mode.
		Disabled	All USB interfaces run in USB 1.1 mode.

BIOS Setting	Description	Setting Options	Effect
Legacy USB	You can enable/disable Legacy USB	Disabled	Disables this function.
Support	support here. USB interfaces do not function during	Enabled	Enables this function.
	startup. USB is supported after the operating system has started. USB keyboard is recognized during the POST.	Auto	Automatic enabling.
USB Legacy POST-Always	Option to enable Legacy USB Support during the POST (Power On Self Test), the same as the Legacy USB Support setting.	Enabled	Enables calling the BIOS Setup during the POST with a USB keyboard.
		Disabled	Disables this function.
USB Keyboard	You can enable/disable USB keyboard	Disabled	Disables this function.
Legacy Support	support here.	Enabled	Enables this function.
USB Mouse	You can enable/disable USB mouse	Disabled	Disables this function.
Legacy Support	support here.	Enabled	Enables this function.
USB Storage	You can enable/disable USB storage device support here.	Disabled	Disables this function.
Device Support		Enabled	Enables this function.
Port 64/60 Emulation			USB keyboard functions in all systems excluding Windows NT.
		Enabled	USB keyboard functions in Windows NT.
USB 2.0	Defines settings for the USB controller.	Full speed	12 Mbps
Controller Mode		Hi speed	480 Mbps
BIOS EHCI	Defines operating system support for the	Disabled	Disables this function.
Hand-Off	fully automatic EHCI function.	Enabled	Enables this function.
USB Beep	Option for outputting a tone each time a	Disabled	Disables this function.
Message	USB device is detected by the BIOS during the POST.	Enabled	Enables this function.
USB Stick Default Emulation	You can set how to use the USB devices.	Auto	USB devices with less than 530 MB of memory are simulated as floppy disk drives. Devices with larger capacities are simulated as hard drives.
		Hard disk	An HDD-formatted drive (such as Zip drive) can be used as a FDD for starting the system.

BIOS Setting	Description	Setting	Effect
		Options	
USB Mass Storage Reset Delay	You can define the amount of time the USB device POST waits after the device start command. NOTE: The message "No USB mass storage device detected" will appear if no USB memory device is installed.	10 Sec, 20 Sec, 30 Sec, 40 Sec	Manually define the delay time.

Boot Menu

Boot Menu



Boot Device Priority Settings

Boot Setting	Description	Setting Options	Effect
Boot Priority Selection	You can define the drive used to boot up the machine.	Device based	Only devices that are recognized by the system are listed. You can change the sequence of items in the device list.
		Type based	You can change the sequence of items in the device list. You can add to the list device types that are not connected.

Boot Setting	Description	Setting Options	Effect
1st Boot Device	Use this option to	Disabled, Primary Master, Primary	Select the desired boot
2nd Boot Device	define the boot drive.	Slave, Secondary Slave, Legacy Floppy, USB Floppy, USB CDROM,	sequence.
3rd Boot Device		USB Removable Device, Onboard	
4th Boot Device		LAN, External LAN, PCI Mass	
5th Boot Device		Storage, PCI SCSI Card, Any PCI, BEV Device, Third Slave, PCI RAID,	
6th Boot Device		Local BEV ROM	
7th Boot Device			
8th Boot Device			

Boot Settings Configuration

Boot Setting	Description	Setting Options	Effect
Quick Boot	This function reduces the boot time by	Disabled	Disables this function.
	skipping some POST procedures.	Enabled	Enables this function.
Quiet Boot	Determines if POST message or OEM	Disabled	POST message display.
	logo (default = black background) is displayed.	Enabled	OEM logo display instead of POST message.
Automatic Boot	With this option, the operating system	Disabled	Disables this function.
List Retry	attempts to automatically restart following startup failure.	Enabled	Enables this function.
Add On ROM	Sets the display mode for ROM (during the boot procedure).	Force BIOS	Displays an additional BIOS part.
Display Mode		Keep Current	Displays BIOS information.
Hold On Errors	This option sets whether the system should pause the Power On Self Test	Disabled	The system does not pause. Ignores all anomalies.
	(POST) when it encounters an anomaly.	Enabled	System pause. The system pauses every time an anomaly is encountered.
Hit 'DEL'	You can define to display the "Hit 'DEL'	Disabled	The message does not displayed.
Message Display	Message" on startup. NOTE: When Quiet Boot is enabled, the message will not display.	Enabled	The message will display.
Interrupt 19	Controls BIOS interrupt.	Disabled	Disables this function.
Capture		Enabled	Enables this function.
PXE Boot to	Enables/disables the ability to boot	Disabled	Disables this function.
LAN (ETH1)	from LAN (ETH1).	Enabled	Enables this function.

Boot Setting	Description	Setting Options	Effect
Slide-In 2	Enables/disables optional ROM for a	Disabled	Disables this function.
Optional ROM	slide-in 2 drive.	Enabled	Enables this function.
Power Loss			Remains off
Control following power loss.	following power loss.	Turn On	Powers on
		Last State	Enables the previous state.

Security Menu

Security Menu

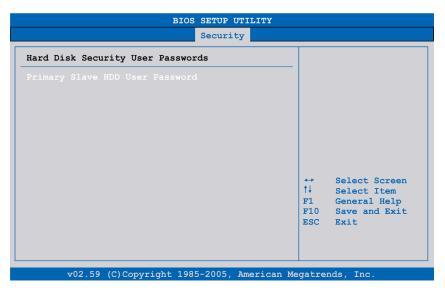


The following table shows the **Security** menu setting options:

BIOS Setting	Description	Setting Options	Effect
Supervisor Password	Displays whether or not a supervisor password has been set.	None	-
User Password	Displays whether or not a user password has been set.	None	-
Change Supervisor Password	Enter/change the supervisor password. A supervisor password is necessary to edit BIOS settings.	Enter	Enter password.
Change User Password	Enter/change a user password. A user password allows the user to edit certain BIOS settings.	Enter	Enter password.

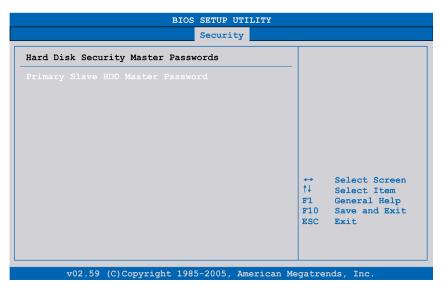
BIOS Setting	Description	Setting Options	Effect
Boot Sector Virus	With this option, a warning	Disabled	Disables this function.
Protection	is issued when the boot sector is accessed through a program or virus. NOTE: With this option, only the boot sector, not the entire hard drive, is protected.	Enabled	Enables this function.
Hard Disk Security User Password	You can create the hard disk security user password here.	Enter	Opens submenu (see page 119).
Hard Disk Security Master Password	You can create the hard disk security master password here.	Enter	Opens submenu (see page 120).

Hard Disk Security User Passwords



BIOS Setting	Description	Setting Options	Effect
Primary Slave HDD User Password	With a valid user password, you can change or configure hard drives without rebooting the device. A user password allows the user to edit specific BIOS settings.	Enter	Enter password.

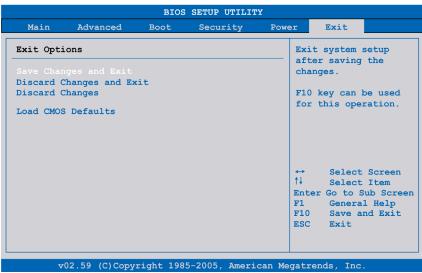
Hard Disk Security Master Passwords



BIOS Setting	Description	Setting Options	Effect
Primary Slave HDD Master Password	With a valid user password, you can change or configure hard drives without rebooting the device.	Enter	Enter password.

Exit Menu

Exit Menu



The following table shows the **Exit** menu setting options:

BIOS Setting	Description	Setting Options	Effect
Save Changes and Exit	Changes and Displays a confirmation message box. On confirming you want to save changes to the BIOS settings, saves the new settings to CMOS, and restarts the system.		-
Discard Changes and Exit	ard Changes and Exits the BIOS settings without making any changes, and restarts the system.		-
Discard Changes Restores the previously saved BIOS settings and discards any changes that were made during the current session.		OK / Cancel	-
Load CMOS Defaults	Loads the CMOS default values, defined by the DIP switch settings. This command loads CMOS default values for all BIOS configurations.	OK / Cancel	-

BIOS Default Settings

The CMOS profile switches, located on the front side of the unit near the LEDs, are used to load pre-defined BIOS profile settings, which are based on the position of the switches.

The switch positions at delivery represents the optimum BIOS default values and should not be changed.

Subject of this Chapter

This chapter is about the hardware modifications for the Magelis Panel PC.

You can use optional units, Main Memory and CF cards manufactured by Schneider Electric, as well as commercial devices and boards with this product.

What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
Before Modifications	124
Uninterruptible Power Supply (UPS)	
PCI / PCIe Card Installation	
Compact Flash (CF) Card Installation and Removal	
RAID Option Installation	141

Before Modifications

Overview

For detailed installation procedures for optional units, refer to the OEM (Original Equipment Manufacturer) Installation Guide included with the optional unit.

A A DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Unplug the power cable from both the Panel PC and the power supply.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace and secure all covers or elements of the system before applying power to the unit.
- Use only the specified voltage when operating the Panel PC. The AC unit is designed to use 100...240 Vac input. The DC unit is designed to use 24 Vdc. Always check whether your device is AC or DC powered before applying power.

Failure to follow these instructions will result in death or serious injury.

A DANGER

EXPLOSION HAZARD

- Always confirm the ANSI/ISA 12.12.01 and CSA C22.2 N° 213 hazardous location rating of your device before installing or using it in a hazardous location.
- To power on or power off a Panel PC installed in a Class I, Division 2 hazardous location, you must either:
 - Use a switch located outside the hazardous environment, or
 - Use a switch certified for Class I, Division 1 operation inside the hazardous area.
- Do not connect or disconnect equipment unless power has been switched off or the area is known to be non-hazardous. This applies to all connections including power, ground, serial, parallel, and network connections.
- Never use unshielded / ungrounded cables in hazardous locations.
- Use only non-incentive USB configuration.
- When enclosed, keep enclosure doors and openings closed at all times to avoid the accumulation of foreign matter inside the workstation.

Failure to follow these instructions will result in death or serious injury.

During operation, surface temperatures of the heat sink may reach 70 °C (158 °F).

A WARNING

RISK OF BURNS

Do not touch the surface of the heat sink during operation.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

A CAUTION

OVERTORQUE AND LOOSE HARDWARE

- Do not exert more than 0.5 Nm (4.5 lb-in) of torque when tightening the installation fastener, enclosure, accessory, or terminal block screws. Tightening the screws with excessive force can damage the plastic installation fastener.
- When installing or removing screws, ensure that they do not fall inside the Panel PC chassis.

Failure to follow these instructions can result in injury or equipment damage.

A CAUTION

STATIC SENSITIVE COMPONENTS

Panel PC internal components, including accessories such as RAM modules and expansion boards, can be damaged by static electricity.

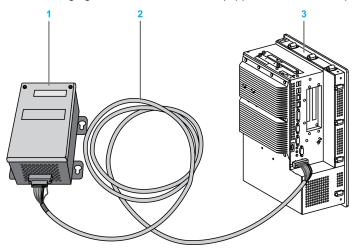
- Keep static-producing materials (plastic, upholstery, carpeting) out of the immediate work area.
- Do not remove ESD-sensitive components from their anti-static bags until you are ready to install them.
- When handling static-sensitive components, wear a properly grounded wrist strap (or equivalent).
- Avoid unnecessary contact with exposed conductors and component leads with skin or clothing.

Failure to follow these instructions can result in injury or equipment damage.

Uninterruptible Power Supply (UPS)

Overview

The Uninterruptible Power Supply (UPS) option is only available for DC Panel PC. The following figure shows a Panel PC equipped with the UPS option:



- 1 Battery unit
- 2 UPS connection cable 3 m (9.84 ft)
- 3 Panel PC with integrated UPS module interface card (pre-installed)

The main features of the UPS option are:

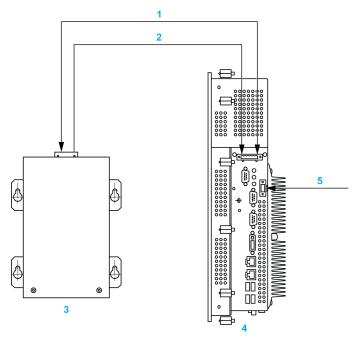
- Long-lasting, maintenance-free rechargeable batteries
- Communication via integrated interfaces
- Temperature sensor
- Deep discharge protection

UPS Principle

With the optionally integrated UPS, the Panel PC system completes write operations even after a power loss. When the UPS detects a power loss, it switches to battery operation immediately without interruption. This means that all running programs are ended properly by the UPS software. This prevents the possibility of inconsistent data.

NOTE:

- This function is only available if the UPS is configured and its driver is activated (see page 166).
- The monitor is not handled by the UPS and will shut off when the power fails.



- 1 Battery / Load mode
- 2 Temperature
- 3 UPS battery unit
- 4 Magelis Panel PC with integrated UPS module
- 5 Supply voltage 24 Vdc

Integrated UPS Module Description

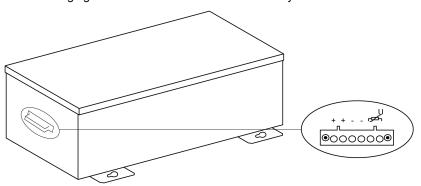
The following table gives the technical data of the UPS module integrated in the Panel PC with the UPS option:

Features	Values
Switching Threshold Mains / Battery Operation	15 / 13 V
Mains Failure Bridge-over Time	Max. 20 min at 150 W load
Charging Current	Max. 0.5 A
Deep Discharge Protection	At 10 Vdc on the battery unit
Short Circuit Protection	No
Power Requirements	Max. 7.5 W
Status Indicators	Via the system monitor (see page 161)
Configuration	Via the system monitor settings (see page 166)

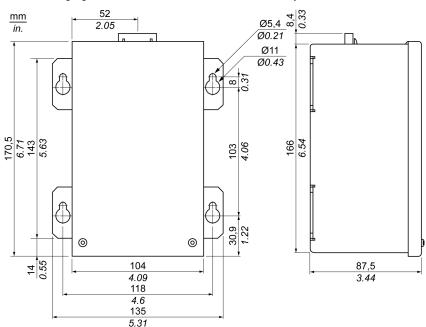
Battery Unit Description

The battery unit is subject to wear and should be replaced regularly (at least following the specified lifespan).

The following figure shows the connector of the battery unit:

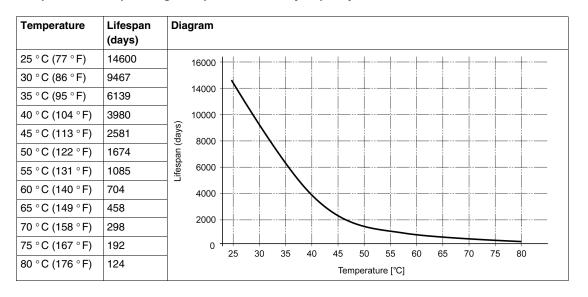


Features	Values
Battery: Type Method	Enersys Cyclon 12 V 5 Ah (6 connected in series) Single cell (X cell)
Rated Voltage	12 Vdc
Operating Current	Max. 8 A
Deep Discharge Voltage	10 Vdc
Temperature Sensor	NTC resistance
Weight	Approx. 3.2 kg (7.05 lbs)
Ambient Temperature: Operation Storage Transport Relative Humidity: Operation Storage Transport	-4080 °C (-40176 °F) -6580 °C (-85176 °F) -6580 °C (-85176 °F) 595 %, non-condensing 595 %, non-condensing 595 %, non-condensing
Altitude	Max. 3000 meters (9843 feet)
Lifespan	10 years at 25 °C (77 °F) (up to 80 % battery capacity)
Maintenance Interval (During Storage)	Charge once every 6 months
Typical Recharge Time at Low Battery	15 hours

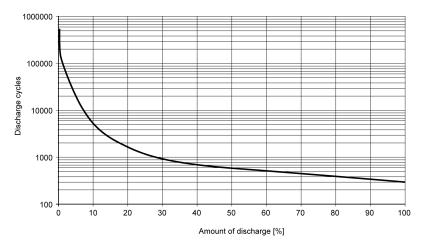


The following figure shows the dimensions of the battery unit:

Temperature Lifespan Diagram up to 20 % Battery Capacity



Deep Discharge Cycles



UPS Connection Cable

The UPS connection cable has two different shapes of 6-pin connectors to help prevent a cable connector from being inserted in the incorrect connector (UPS battery or Panel PC side):



- 1 6-pin plug connector
- 2 6-pin socket connector

The following table gives the technical data for the UPS connection cable:

Features	Values
Length	3 m (9.843 ft)
Outer Diameter	8.5 mm ±0.2 mm (0.33 in. ±0.0078 in.)
Connector Type	6-pin plug connectors, tension clamp connection 6-pin socket connectors, tension clamp connection
Wire Cross Section Temperature Sensor Wire Voltage Wire	2 x 0.5 mm ² (AWG 20) 4 x 2.5 mm ² (AWG 13)

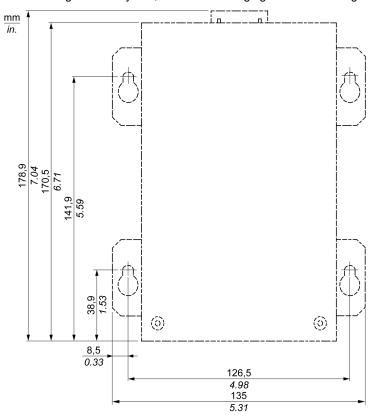
Features	Values
Line Resistance 0.5 mm ² 2.5 mm ²	Max. 39 Ω/km (63 Ω/mile) Max .7.98 Ω/km (13 Ω/mile)
Flex Radius Fixed Installation Free-moving	5 x wire cross-section 10 x wire cross-section
Temperature Range Operation Storage	-580 °C (23176 °F) -3080 °C (-22176 °F)
Weight	Approx. 143 kg/km (230 kg/miles)
Materials Cable Shielding Color	Thermoplastic PVC-based material Window gray (similar to RAL 7040)
Peak Operating Voltage	12 Vdc
Testing AC Voltage Wire/wire	1500 Vac
Operating Voltage	Max. 300 Vac
Current Load	10 A at 20 °C (10 A at 68 °F)

Mounting Instructions

By integrating the charging circuit in the Panel PC housing, installation is reduced to merely attaching the connection cable to the battery unit mounted next to the Panel PC.

Due to the construction of these batteries, you can store and operate the battery unit in any position.

For mounting the battery unit, use the following figure as the drilling template:



PCI / PCIe Card Installation

Overview

Before installing or removing a PCI / PCIe card, shut down Windows® in an orderly fashion and remove all power from the device.

A A DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Unplug the power cable from both the Panel PC and the power supply.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace and secure all covers or elements of the system before applying power to the unit.
- Use only the specified voltage when operating the Panel PC. The AC unit is designed to use 100...240 Vac input. The DC unit is designed to use 24 Vdc. Always check whether your device is AC or DC powered before applying power.

Failure to follow these instructions will result in death or serious injury.

PCI / PCIe Cards with Cables

When using a PCI / PCIe card with an external cable attached, install a clamp or other device to secure the cable.

A WARNING

EQUIPMENT DISCONNECTION OR UNINTENDED EQUIPMENT OPERATION

- Ensure that power, communication, and accessory connections do not place excessive stress on the ports. Consider the vibration environment when making this determination.
- Securely attach power, communication, and external accessory cables to the panel or cabinet.
- Use only commercially available USB cables.

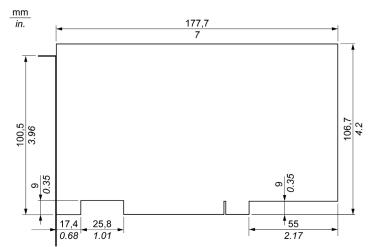
Failure to follow these instructions can result in death, serious injury, or equipment damage.

PCI or PCIe Card Dimensions

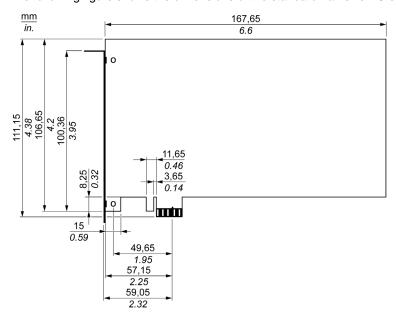
Depending on the bus type, you can use standard PCI 2.2 half-size cards or PCI Express (PCIe) half-size cards.

NOTE: PCI or PCIe cards cannot exceed the following dimensions.

The following figure shows the dimensions of the standard half-size PCI card:

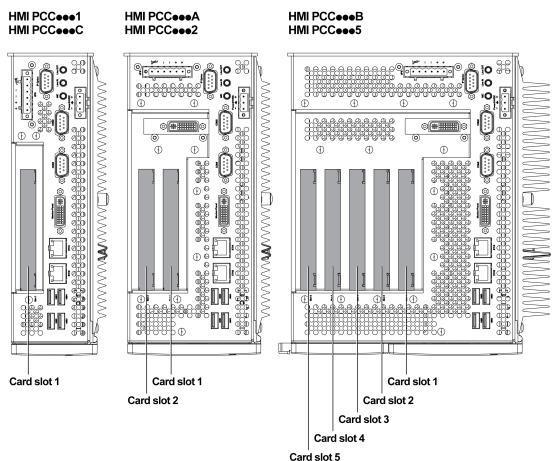


The following figure shows the dimensions of the standard half-size PCle card:



PCI Card Slot Position

The following figure shows the PCI card slot position:



NOTE: Take into account the PCI/PCIe card type restriction according to the table below.

The following table provides an overview of the card slots where inserting 64-bit cards is possible:

Box PC	Part Number	Card Slot 1	Card Slot 2	Card Slot 3	Card Slot 4	Card Slot 5
1 slot	HMI PCC•••1	32-bit PCI	_	_	_	_
	HMI PCC•••C	PCIe	_	_	_	_

Box PC	Part Number	Card Slot 1	Card Slot 2	Card Slot 3	Card Slot 4	Card Slot 5
2 slots	HMI PCC•••A	32-bit and 64-bit PCI	32-bit PCI	_	_	_
	HMI PCC•••2	32-bit and 64-bit PCI	PCIe	_	-	-
5 slots	HMI PCC•••B	32-bit and 64-bit PCI	32-bit and 64-bit PCI	32-bit and 64-bit PCI	32-bit PCI	PCle
	HMI PCC•••5	32-bit and 64-bit PCI	32-bit and 64-bit PCI	PCle	PCIe	PCle

PCI/PCIe Card Installation

NOTICE

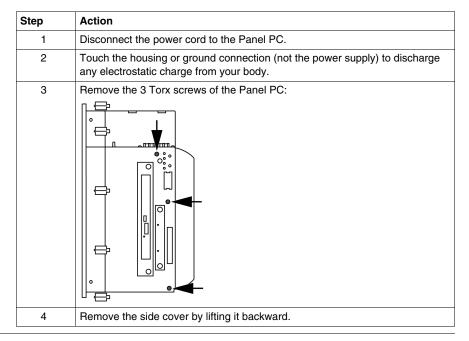
ELECTROSTATIC DISCHARGE

Take the necessary protective measures against electrostatic discharge before attempting to remove the Panel PC cover.

Failure to follow these instructions can result in equipment damage.

NOTE: Be sure to remove all power before attempting this procedure.

The table below describes how to install a PCI or PCIe card:



Step	Action
5	Unscrew the screw from the empty panel and remove the blank panel. Insert the PCI/PCIe board into the expansion board connector and secure in place using the filler panel screw. NOTE: The recommended torque to tighten these screws is 0.5 Nm (4.5 lb-in).
6	Replace the side cover and secure it by inserting the Torx screws.

A CAUTION

OVERTORQUE AND LOOSE HARDWARE

- Do not exert more than 0.5 Nm (4.5 lb-in) of torque when tightening the installation fastener, enclosure, accessory, or terminal block screws. Tightening the screws with excessive force can damage the plastic installation fastener.
- When installing or removing screws, ensure that they do not fall inside the Panel PC chassis.

Failure to follow these instructions can result in injury or equipment damage.

Compact Flash (CF) Card Installation and Removal

Preparing to Use a CF Card

The Panel PC operating system views the CF Card as a hard disk. Proper handling and care of the CF Card helps extend the life of the Card. Familiarize yourself with the Card prior to attempting insertion or removal of the Card.

A A DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Unplug the power cable from both the Panel PC and the power supply.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace and secure all covers or elements of the system before applying power to the unit.
- Use only the specified voltage when operating the Panel PC. The AC unit is designed to use 100...240 Vac input. The DC unit is designed to use 24 Vdc. Always check whether your device is AC or DC powered before applying power.

Failure to follow these instructions will result in death or serious injury.

A CAUTION

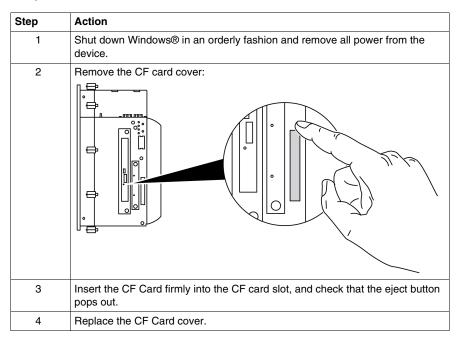
COMPACT FLASH CARD DAMAGE AND DATA LOSS

- Remove all power before making any contact with an installed CF card.
- Use only CF cards manufactured by Schneider Electric. The performance of the Panel PC has not been tested using CF cards from other manufacturers.
- Confirm that the CF card is correctly oriented before insertion.
- Do not bend, drop, or strike the CF card.
- Do not touch the CF card connectors.
- Do not disassemble or modify the CF card.
- Keep the CF card dry.

Failure to follow these instructions can result in injury or equipment damage.

Inserting the CF Card

The procedure below describes how to insert the CF Card.



Removing the CF Card

The procedure below describes how to remove the CF Card.

Step	Action
1	Shut down Windows® in an orderly fashion and remove all power from the device.
2	Remove the CF card cover (see page 139).
3	Press the eject button all the way to remove the CF Card from the CF Card slot. NOTE: The best way to do this is to use a pointed object such as a small screwdriver.
4	After removing the CF card, replace the CF Card cover.

Data Writing Limitation

The CF Card is limited to approximately 100,000 write operations. Back up all CF Card data regularly to another storage media.

CF Card Data Backup

Refer to the relevant procedure in the Software Installation Guide for Magelis Industrial Panel PC and Terminals, shipped with the product.

RAID Option Installation

Introduction

RAID option is a PCI board including two HDD.

The RAID option installation is carried out in 4 main phases:

Pase A: Hardware installation

Phase B: Configuration of SATA RAID area

Phase C: RAID driver installation (only required for Windows® Embedded Standard

2009 and Windows® Embedded Standard 7)

Phase D: Installation of RAID tool

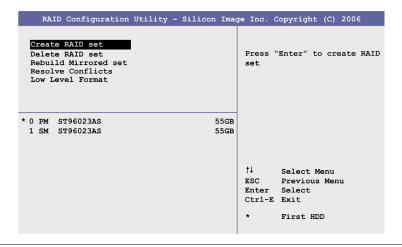
Phase A - Hardware Installation

Install the RAID PCI board according to procedure in previous section PCI/PCIe card installation (see page 133).

Phase B - Configuration of SATA RAID Area

During the boot sequence, press F4 or Ctrl+S to enter the RAID configuration utility.





The following keys can be used after entering the BIOS setup:

Key	Function
Up cursor ↑	Go to previous item.
Down cursor ↓	Go to the next item.
Enter	Select an item or open a submenu.
ESC	Go back to previous menu.
Ctrl+E	Exit setup and save the changed settings.

You can access the following screens from the BIOS setup:

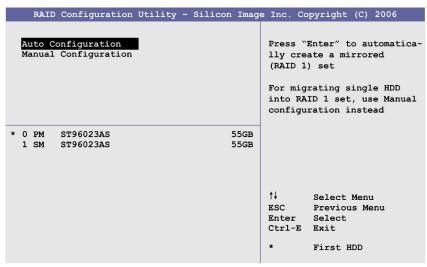
- Create RAID set
- · Create RAID set mirrored
- Delete RAID set
- Rebuild mirrored set
- · Resolve conflicts
- Low level format

Create RAID Set

The RAID system can be recreated as **Mirrored** = RAID1 using the **Create RAID Set** menu:



Create RAID Set-mirrored



Auto Configuration optimizes all settings.

Manual Configuration makes it possible to specify the **Source** and **Target** HDD, and also to specify whether a rebuild (mirror) should be performed immediately.

Delete RAID Set

You can delete an existing RAID by using the **Delete RAID set** menu:



Rebuild Mirrored Set



You can use the **Rebuild mirrored set** menu to restart a rebuild procedure in a RAID 1 network if an error is detected, after first interrupting the rebuild procedure or when exchanging a hard disk.

If **onlinerebuild** is selected, then the rebuild is executed during operation after the system is booted. An event pop-up is displayed by the installed SATA RAID configuration program: **SATARaid detected a new event** and the rebuild is started.

If **offlinerebuild** is selected, then a rebuild is performed immediately before starting the operating system.

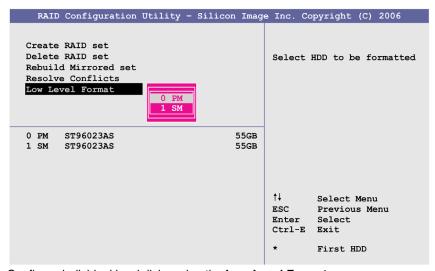
Resolve Conflicts



You can resolve conflicts in a RAID set by using the **Resolve conflicts** menu.

NOTE: This function is only available if the status of the hard disk is **conflict**.

Low Level Format



Configure individual hard disks using the Low Level Format menu.

NOTE: This can only be done if a RAID set is not configured.

Phase C - RAID Driver Installation

NOTE: This phase is only required for Windows® Embedded Standard 2009 and Windows® Embedded Standard 7 operating systems.

Format the RAID area disks with the windows format tool before beginning the procedure.

If your Panel PC is not equipped with a DVD drive, use another PC to copy the RAID driver and RAID tool from the restore DVD on to a USB key.

Step	Action
1	In Start menu, right click My Computer →Properties
2	In System Properties window, select the Hardware tab and then click Device Manager.
3	In the device list, search the RAID controller.
4	Right click the RAID Controller and then click Update Device Software (Windows 7) or Update Drivers (Windows XP Professional).
5	Browse the computer to the appropriate RAID driver (either on DVD or USB key).
6	When the wizard indicates that it found a driver for the device, install it.
7	The wizard will now copy the required files to the system and start the driver. After starting the driver the wizard will display a completion dialog.
8	If the software driver was not successfully installed, a popup message will appear. You need to reinstall, beginning at Step 1.

Phase D - Installation of RAID Tool

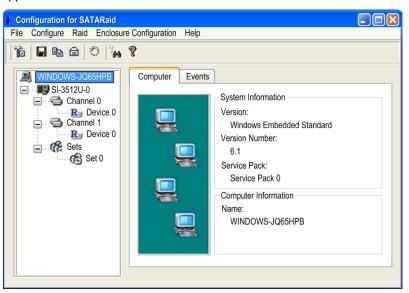
Step	Action	
1	Install the RAID tool available on the restore DVD or (USB key) according to the operating system running on the Panel PC.	
2	For Windows XP Operating system: Follow instruction in the read me available inside the tool folder.	
	For Windows 7 Operating system: Double click setup.	

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Configuration for SATA RAID Option

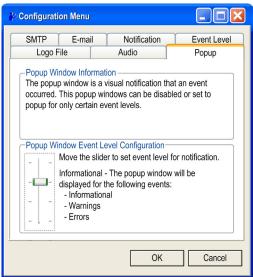
When installation is completed, a new SATARaid icon is available inside the task bar.

Double click the SATARaid icon and the **Configuration for SATARaid** dialog box appears:



Configuration Menu

Click **Configure Configure** and the following dialog box appears:



The above screenshot shows the different tabs that are used to configure the RAID option.

Installation



Subject of this Part

This part describes the product installation.

What Is in This Part?

This part contains the following chapters:

Chapter	Chapter Name	Page
9	Connections to PLCs	151
10	System Monitor	155
11	Maintenance	167

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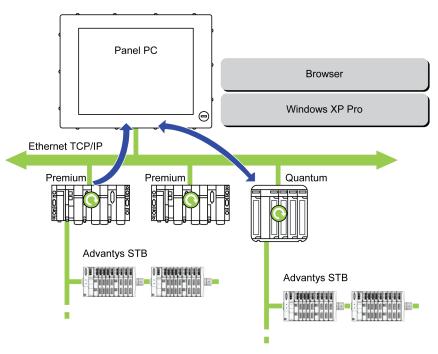
Connection to PLCs

Introduction

Two different kinds of architecture are possible when connecting the Panel PC to PLCs:

- Transparent Ready Architecture
- Traditional Architecture

Transparent Ready Architecture

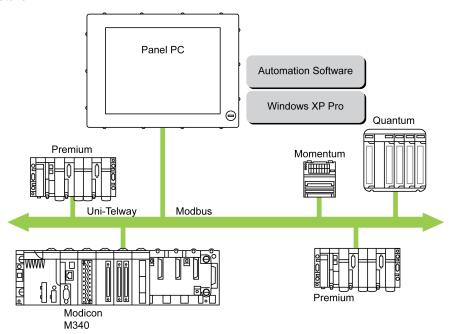


With its built-in Ethernet 10/100 Mbps ports, you can integrate the Panel PC into *full Ethernet* architectures, such as Transparent Ready. Transparent Ready devices in this type of architecture enable transparent communication over the Ethernet TCP/IP network. Communication services and Web services permit the sharing and distribution of data between levels 1, 2 and 3 of the Transparent Ready architecture.

Used as a client station, the Panel PC makes it easier to implement Web Client solutions for:

- Basic servers embedded in field devices (Advantys STB/Momentum distributed I/O, ATV 71/38/58 starters, OsiSense identification systems, and so on).
- FactoryCast Web servers embedded in Modicon PLCs (TSX Micro, Premium and Quantum) or the FactoryCast gateway. The following services are available as standard (without the need for additional programming): alarm management, comprehensive view management and Web home pages created by users.
- FactoryCast HMI Web servers embedded in Modicon Premium and Quantum PLCs which also provide basic data management services, automatic e-mail sending triggered by specific process events and arithmetic and logic calculations for data preprocessing.

Traditional Architecture

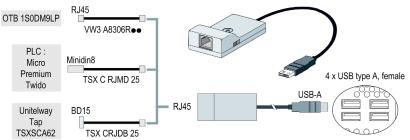


The Panel PC terminal with Vijeo Designer automation software can be used in fieldbus architectures such as Uni-Telway/Modbus or Fipway/Modbus Plus.

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The Panel PC terminal can connect to Uni-Telway, Modbus, and Fipway networks, but different connection devices are required depending on the network and on the communication port used. These devices are specified below:

- For USB slot:
 - Modbus and Uni-Telway with the TSXCUSB485 converter enables the iPC to connect to remote devices using an RS-485 interface.
 The Panel PC, compatible with Modbus and Uni-Telway, requires the standard Schneider drivers provided with software such as Unity Pro, PL7-Pro or a driver on the CD called TLXCDDRV20M. An example is provided in the drawing below:



 Modbus Plus network with the TSXCUSBMBP converter. This converter is compatible with PCs equipped with CONCEPT, ProWORX or Unity Pro. An example is provided in the drawing below:



(1) Requires the X-Way drivers CD-ROM, TLXCDDRV20M.

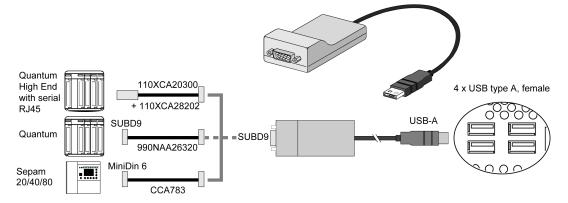
Cables and Converters

For using different types of PLCs, the following cables and converters are required:

- TSX PCX 1031 connection cable for Nano, Micro and Premium.
 This cable is supplied with Unity Pro, PL7 Pro and PL7 Junior software.
- FT20CBCL30 connection cable for the Series 7 family (including TSX 27 PLCs, and TSX/PMX 47/67/87/107 PLCs).
 - This cable is supplied with the XTEL Pack software.
- TSX17ACCPC converter for TSX 17 LCs.
- TSXCUSB232 converter for connecting the iPC, via an USB port, to remote devices using an RS-232C interface.

NOTE: This device, compatible with Modbus and Uni-Telway, requires the standard Schneider drivers provided with software such as Unity Pro, PL7-Pro or a driver on the CD called TLXCDDRV20M.

An example using the TSXUSB232 converter is provided in the drawing below:



System Monitor

10

Subject of this Chapter

This chapter describes the system monitor features of the Panel PC.

What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
System Monitor Interface	156
System Monitor Setting	163

System Monitor Interface

Overview

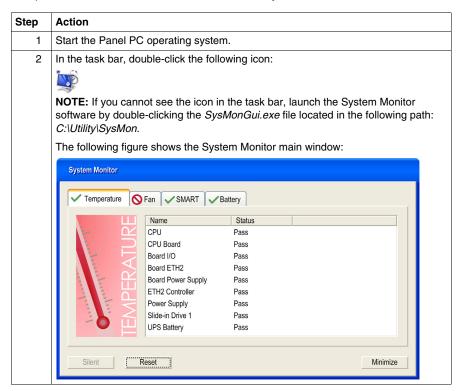
The System Monitor software enables you to monitor the following system parameters:

- Temperature
- Fan
- SMART
- Battery

Depending on the configuration (see page 163), if thresholds are exceeded the System Monitor Software alerts via a popup message (see page 162), sound, buzzer and an entry in the windows event log. You can configure (see page 166) a system shutdown when an alarm occurs.

Accessing the System Monitor

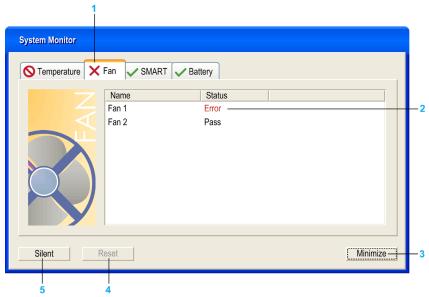
The procedure below shows how to access the System Monitor interface:



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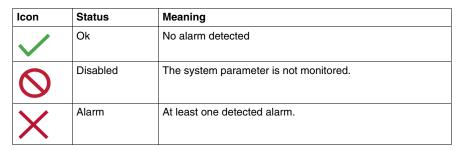
System Monitor Interface Description

The System Monitor interface shows all possible parameters and their actual status in system parameter tabs.



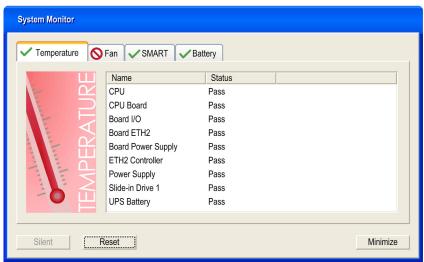
- 1 Icon specific tab (Refer to the table below).
- 2 Item name and status
- **3** Minimize the System Monitor to the system tray.
- 4 Resets alarmed item.
- 5 Disable buzzer and sound. Only active when sound or buzzer is playing.

The following table describes the icons of the system parameter tab:



Temperature Status

The following figure shows the **Temperature** tab:

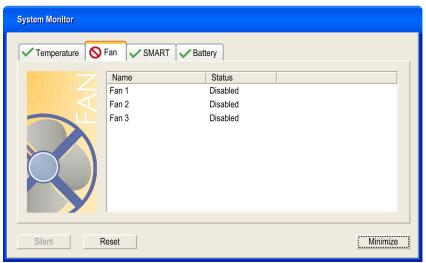


The following table describes the status messages of temperature parameters:

Status	Meaning
Pass	No alarm detected
Error	Alarm (limit exceeded)
Disabled	No alarm monitoring
***	Service is not running

Fan Status

The following figure shows the **Fan** tab:



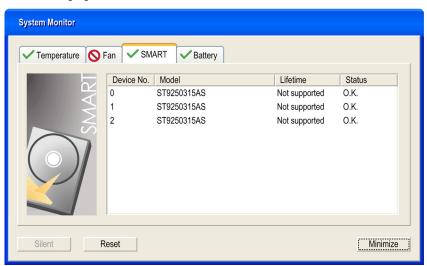
The following table describes the status messages of fan parameters:

Status	Meaning
Pass	No alarm detected
Error	Alarm (a fan does not function as expected)
Disabled	No alarm monitoring
***	Service is not running

SMART Status

The **SMART** status monitors the hard disk.

The following figure shows the **SMART** tab:



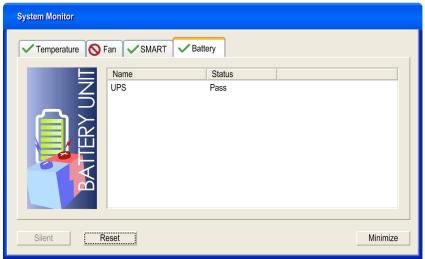
NOTE: In addition to the **Status** column, the **SMART** tab shows a column for the device lifetime. If the device has lifetime support, a **Lifetime** value in percent with a bar graph is displayed, otherwise "**Not supported**" is shown.

The following table describes the status message of the Panel PC drives:

Status	Meaning
O.K.	No alarm detected
Alert	Failure reported by SMART or disk life-time reached
Disabled	No alarm monitoring
***	Service is not running

Battery Status

The following figure shows the **Battery** tab:

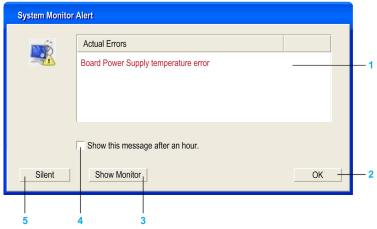


The following table describes the status message of the battery parameters:

Status	Meaning
Pass	No alarm detected.
Error	Battery unit detected a failure, e.g. battery is disconnected.
On Battery	Power failure - system is running on battery.
Low Battery	Battery level is critically low.
No Battery	No battery connected.
Low Battery Shutdown	Power failure - system is running on battery and battery level is critically low -> system shutdown is initiated.
Disabled	No alarm monitoring.
***	Service is not running.

Popup Window Description

When an alarm is detected the following popup window is displayed:



- 1 Shows the alarm or item that can be reset.
- 2 Closes the System Monitor Alert window.
- 3 Shows the main window.
- 4 If the check box is selected, closes the window for one hour even though the alarm is active. (A new alarm shows the window again).
- 5 Disable buzzer and sound. Only active when sound or buzzer is playing.

System Monitor Setting

Overview

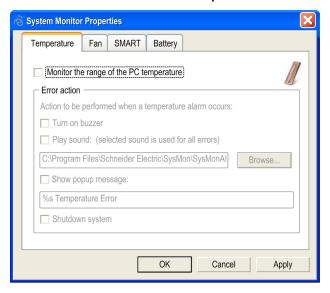
You can set the System Monitor parameters and specify the type of alarm in the System Monitor applet in the Windows Control Panel.

Each system parameter has its own tab.

Use the following dialog box tabs to display the monitoring parameters and set up the various elements to monitor.

Temperature - System Monitor Properties

The screenshot below shows the **Temperature** tab:



Field	Description
Monitor the range of the PC temperature	Select this check box to enable and begin monitoring the PC temperature. When enabled <i>(see page 166)</i> , set the Error action .

Fan - System Monitor Properties

NOTE: Only available for Universal and Performance Panel PC.

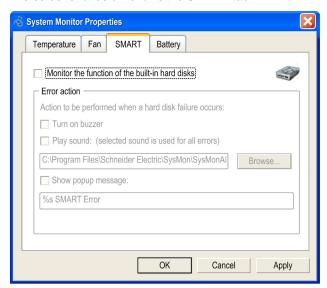
The screenshot below shows the Fan tab:



Field	Description
	Select this check box to enable and begin monitoring the function of fans. When enabled <i>(see page 166)</i> , set the Error action .

SMART - System Monitor Properties

The screenshot below shows the **SMART** tab:



Field	Description
Monitor the function of the built-in hard disks	Select this check box to enable and begin monitoring the built-in hard disks. When enabled (see page 166), set the Error action .

Battery - System Monitor Properties

NOTE: Only available for Universal and Performance DC Panel PC.

The screenshot below shows the **Battery** tab:



Field	Description
Monitor the status of the installed battery unit (UPS)	Select this check box to enable and begin monitoring the installed battery unit. When enabled <i>(see page 166)</i> , set the Error action .

Error Action Configuration

Field	Description
Turn on buzzer	Select this check box to enable the buzzer.
Play sound	Select this check box to enable the sound that is used for all detected errors. Specify the sound file path (Browse button).
Show popup message	When this check box is selected, status messages are diplayed in the form of a popup.
Shutdown system	If you want the system to stop when an error is detected, select this check box. Not available in SMART tab.

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Maintenance

Subject of this Chapter

This chapter covers maintenance of the Panel PC.

What Is in This Chapter?

This chapter contains the following topics:

Topic	Page
Reinstallation Procedure	168
Regular Cleaning and Maintenance	169

Reinstallation Procedure

Introduction

In certain cases, it may be necessary to reinstall the operating system.

Precautions to be taken:

- Keep static-producing materials (plastic, upholstery, carpeting) out of the immediate work area.
- Do not remove ESD-sensitive components from their anti-static bags until you are ready to install them.
- When handling static-sensitive components, wear a properly grounded wrist strap (or equivalent).
- Avoid unnecessary contact with exposed conductors and component leads with skin or clothing.

Before Reinstallation

Hardware required:

- Reinstallation DVD-ROM
- External DVD drive, compatible with DVD+R DL format, and with USB connection for Panel PC without DVD drive.

Setting up the hardware:

- Shut down Windows® in an orderly fashion and remove all power from the device. Then, follow the applicable instructions described in *Uninterruptible* Power Supply (UPS) (see page 126).
- Disconnect all external peripherals.

NOTE: Save all important data on the hard drive or Compact Flash card (the reinstallation process will erase all data). The reinstallation process will return the computer to its factory settings.

Reinstallation

Refer to the relevant procedure in the Restore & Documentation DVD-ROM.

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Regular Cleaning and Maintenance

Introduction

Inspect the Panel PC periodically to determine its general condition. For example:

- Are all power cords and cables connected properly? Have any become loose?
- Are all installation fasteners holding the unit securely?
- Is the ambient temperature within the specified range?
- Are there any scratches or traces of dirt on the installation gasket?

The following describes service/maintenance work which can be carried out by a trained, qualified user.

A A DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Remove all power from the device before removing any covers or elements of the system, and prior to installing or removing any accessories, hardware, or cables.
- Unplug the power cable from both the Panel PC and the power supply.
- Always use a properly rated voltage sensing device to confirm power is off.
- Replace and secure all covers or elements of the system before applying power to the unit.
- Use only the specified voltage when operating the Panel PC. The AC unit is designed to use 100...240 Vac input. The DC unit is designed to use 24 Vdc. Always check whether your device is AC or DC powered before applying power.

Failure to follow these instructions will result in death or serious injury.

A DANGER

EXPLOSION HAZARD

- Always confirm the ANSI/ISA 12.12.01 and CSA C22.2 N° 213 hazardous location rating of your device before installing or using it in a hazardous location.
- To power on or power off a Panel PC installed in a Class I, Division 2 hazardous location, you must either:
 - Use a switch located outside the hazardous environment, or
 - Use a switch certified for Class I, Division 1 operation inside the hazardous area.
- Do not connect or disconnect equipment unless power has been switched off or the area is known to be non-hazardous. This applies to all connections including power, ground, serial, parallel, and network connections.
- Never use unshielded / ungrounded cables in hazardous locations.
- Use only non-incentive USB configuration.
- When enclosed, keep enclosure doors and openings closed at all times to avoid the accumulation of foreign matter inside the workstation.

Failure to follow these instructions will result in death or serious injury.

During operation, surface temperatures of the heat sink may reach 70 °C (158 °F).

A WARNING

RISK OF BURNS

Do not touch the surface of the heat sink during operation.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Cleaning Solutions

A CAUTION

HARMFUL CLEANING SOLUTIONS

- Do not clean the unit or any component of the unit with paint thinner, organic solvents, or strong acids.
- Use only a mild soap or detergent that will not harm the poly carbonate material
 of the screen.

Failure to follow these instructions can result in injury or equipment damage.

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Lithium Battery

The Panel PC contains one battery, which is needed for backing up the real-time clock (RTC).

NOTE: The following characteristics, features and limits only apply to this accessory and can deviate from those specified for the entire device. For the device where this accessory is installed, refer to the data provided specifically for the device.

Features	Values	
Capacity	950 mAh	
Voltage	3 V	
Self Discharge at 23 °C (73.4 °F)	< 1% per year	
Storage Time	Maximum 3 years at 30 °C (86 °F)	
Environmental Characteristics		
Storage Temperature	– 2060 °C (– 4140 °F)	
Relative Humidity	095% non-condensing	

Replacing the Battery

A DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Read and understand the safety information in the Regular Cleaning and Maintenance section (see page 169) before attempting this procedure.

Failure to follow these instructions will result in death or serious injury.

A DANGER

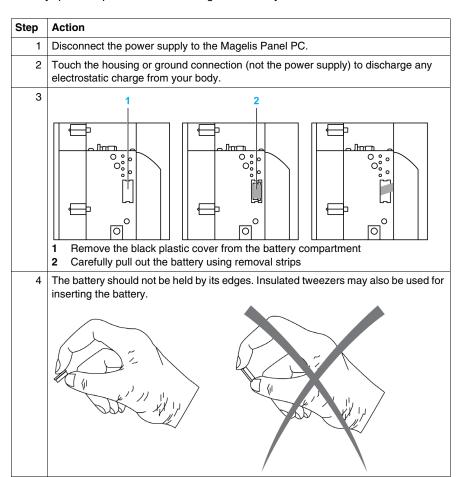
EXPLOSION, FIRE, OR CHEMICAL HAZARD

- Replace battery with identical type.
- Follow all battery manufacturer's instructions.
- Do not recharge, disassemble, heat above 100 °C (212 °F), or incinerate.
- Use your hands or insulated tools to remove or replace the battery.
- Maintain proper polarity when inserting and connecting a new battery.
- Remove all replaceable batteries before discarding the Panel PC.
- Recycle or properly dispose of used batteries.

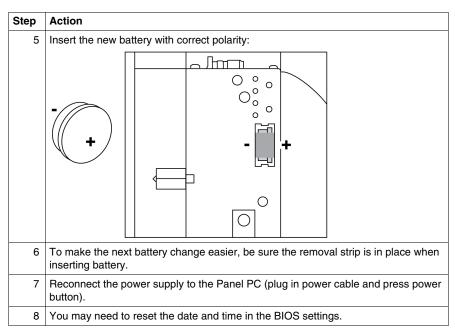
Failure to follow these instructions will result in death or serious injury.

NOTE:

- The product design allows you to change the battery with the Panel PC either on or off.
- Saved settings will be restored when changing the battery with the power turned off (as the settings are stored in non-volatile EEPROM). However, the date and time must be reset because this data is lost when changing the battery.
- Only qualified personnel can change the battery.



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NOTE: Replacement of the battery in the Panel PC other than with the type specified in this documentation may present a risk of fire or explosion.

WARNING

IMPROPER BATTERY CAN PROVOKE FIRE OR EXPLOSION

Replace battery only with identical type: Type CR2477N.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

Replacing the Fan

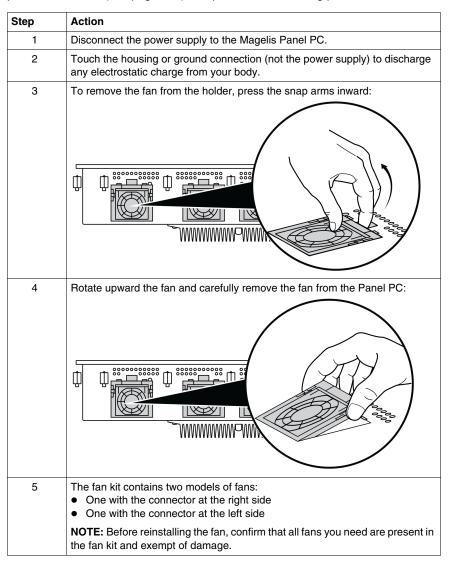
A DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

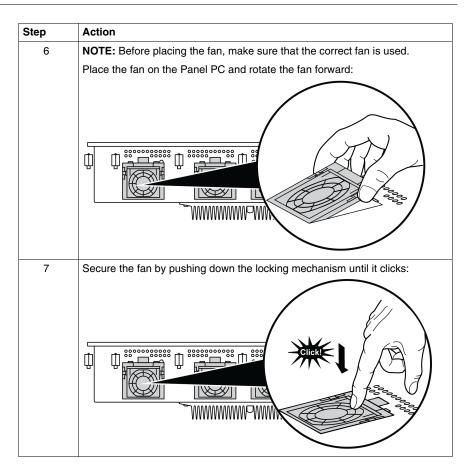
Read and understand the safety information in the Regular Cleaning and Maintenance section (see page 169) before attempting this procedure.

Failure to follow these instructions will result in death or serious injury.

The fans help keep the Panel PC from overheating. If necessary to replace the fans, provide the fan kit (see page 181) and perform the following procedure:



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Replacing the Fan Filter

A DANGER

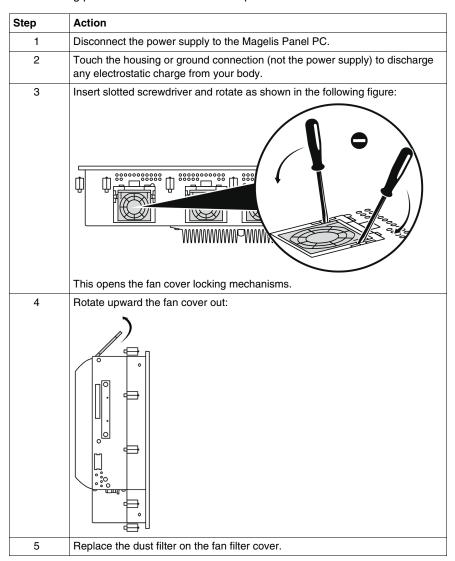
HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Read and understand the safety information in the Regular Cleaning and Maintenance section (see page 169) before attempting this procedure.

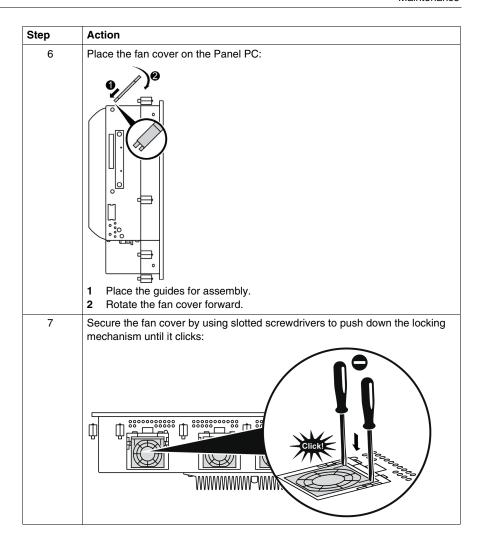
Failure to follow these instructions will result in death or serious injury.

The fan filters are subject to wear, and should be checked with appropriate frequency to determine whether the air flow provides sufficient cooling. An exchange or cleaning of the filters is appropriate at that time.

The following procedure describes how to replace the fan filters:



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Appendices



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Accessories



Accessories for the Panel PC

Available Accessories

Accessories are available as options. The list of accessories available for the Panel PC is shown below:

Description	Reference
Maintenance kit including installation fasteners, installation screws	HMIYPNKT11
Hard disk drive 250 GB	HMIYHDD025011
Flash disk SDD 32 GB	HMIYSDD003211
Compact Flash 2 GB	HMIYCFS0211
Compact Flash 4 GB	HMIYCFS0411
Compact Flash 8 GB	HMIYCFS0811
DVD drive, reader / writer for slide-in	HMIYDRDVDRW11
Adaptor for storage drive in slide-in	HMIYADSLIDEIN11
RAID PCI redundant hard disk drive	HMIYRAIDPCI11
Replacement RAID hard disk drive	HMIYRAIDD025011
UPS kit ext. UPS battery + 3 m cable	HMIYUPSKT11
Power line filter for marine certification	HMIYLFIMAR11
Fan kit for Panel PC 0 slot PCI/PCIe	HMIYPFKT01
Fan kit for Panel PC 2 slots PCI/PCIe	HMIYPFKT02

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